THE ELEMENTARY SCHOOL JOURNAL

VOLUME XXIII FEBRUARY, 1923 NUMBER 6

Educational News and Editorial Comment

FEDERAL PARTICIPATION IN EDUCATION AND THE CHAMBER OF COMMERCE OF THE UNITED STATES

The Chamber of Commerce of the United States is conducting a referendum on the matter of federal participation in education. The outcome of this canvass of the business organizations of the country will be of great importance in its effect on Congress. During the period when Congress was discussing federal participation in the conduct of vocational education a similar referendum was taken, and it was so emphatically in favor of the Smith-Hughes Bill that Congress was compelled to accept the conclusion that the business men of the United States demanded the law.

The present referendum is being conducted on the basis of a pamphlet containing the majority and minority reports of a special committee appointed to draft comments on the Sterling-Towner Bill. Of the eight members of this special committee, five are unfavorable to the bill and sign the minority report; and one is in favor of financial aid but not in favor of a federal department of education.

The arguments in favor of the bill are signed by Superintendent Finegan of Pennsylvania and Mrs. I. C. Wood of the Elizabeth McCormick Memorial Fund. The arguments which they present are strong pleas for the correction of inefficiencies in the present

systems of American schools as conducted by the states. These arguments are prefaced by statements protesting that the bill does not take away from local communities control of their schools.

The majority report makes two points so forcibly and so in agreement with the conviction of the present writer that he ventures to quote them. He has been silent on this issue for some months past in spite of the intemperate writing of the editor of the *Journal of the National Education Association* because he sees no advantage in exchange of ideas on such matters as the sincerity of leading educators and other personal problems. Congress ought to be influenced by facts and probably will be.

The majority report of the Chamber of Commerce of the United States says:

> We have examined in detail the basis of the distribution of federal funds in the Sterling-Towner Bill and find that the framers of the bill have been guided by political considerations rather than educational necessities. It is a log-rolling bill. More than $40,000,000 out of the $100,000,000 appropriation would be apportioned to the following eight states: New York, Pennsylvania, Illinois, Ohio, Massachusetts, Michigan, Iowa, Texas. These states cannot be classed as states with backward educational institutions; they pay their teachers well above the average for the country. There is neither an educational nor a poverty argument for federal aid for these states.
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> Hitherto, the management, control, and support of our public school systems have rested with the local communities and the states. Federal participation in education means a revolutionary change in the conduct of our public schools, for it is the beginning of federal control. This is the inevitable consequence of appropriations of federal money for public schools. The proponents of the Sterling-Towner Bill have thought to prevent the tendency of federal control by inserting a clause in the bill to the effect that the federal government shall not control the expenditure of the money which is to be turned over to the states. This clause is a Ford brake on a Pierce-Arrow car. It won't hold. The recipients of bounties are sure to be compliant to the views of the dispenser of the funds even though his wishes are not embodied in words of command. The spirit of the law is more powerful than the letter. The bill itself contains the beginnings of federal control, as it sets up standards to which the states must conform. It establishes a department of education with a secretary, and it gives him the power to withhold the appropriation from states which do not maintain the standards.

One further comment may be added at this time. The Chamber of Commerce of the United States has set the educators an example

in the method of dealing with public affairs. The educators in charge of the National Education Association bill have done what they could to prevent argument. They have resorted to bullying, calling of names, and suppression of arguments. They have made promises which they knew at the time they made them could not be carried out. They have conducted the cheapest kind of a political game. The Chamber of Commerce of the United States hears both sides and distributes both statements. The Chamber of Commerce is made up of men who know what large-minded leadership really means.

SCIENTIFIC STUDIES OF READING

The Department of Education of the University of Chicago, which is responsible for the editing and publishing of the *Elementary School Journal*, has recently brought to completion a series of scientific studies on reading which it is appropriate to make the subject of special editorial comment. The results of this series of investigations are published in three monographs, the titles and authors of which are as follows: *Fundamental Reading Habits: A Study of Their Development* by Guy Thomas Buswell; *Remedial Cases in Reading: Their Diagnosis and Treatment* by William Scott Gray, with the co-operation of Delia Kibbe, Laura Lucas, and Lawrence William Miller; and *Silent Reading: A Study of the Various Types* by Charles Hubbard Judd and Guy Thomas Buswell.

The three monographs were made possible by a subsidy granted by the Commonwealth Fund. This subsidy was used in enlarging the apparatus needed for the investigations and in relieving the investigators from other duties so that they might devote time to the work.

The investigations are of an analytical type, going much farther than do the tests commonly used in the schools. Instead of merely asking whether pupils are good readers or poor readers, they raise the question, What are the different phases or components of the reading process and at what rate do the different phases develop?

For example, a very good reader is one who recognizes a phrase at a time and does it very rapidly. But seeing quickly what one looks at is one fact, and looking at a long phrase rather than at a

single word is another fact. Learning to see quickly what one is looking at requires a different form of training from learning to look at a group of words rather than at a single word.

Analysis of the reading processes into aspects like those distinguished in the preceding paragraph is sure to have a profound effect in formulating methods of teaching. After such an analysis has been made class work can become precise and effective, because it is directed to particular and clearly defined ends rather than to the vague general purpose of teaching reading as a whole.

The first monograph listed gives a systematic account, based on an extensive study of a large number of pupils, of the development of reading habits. It also demonstrates the fact that pupils in the first grade are controlled in their habits by the methods employed in teaching them. This it does by discovering wholly different reading habits in pupils coming from two neighboring schools.

The second monograph describes a number of pupils who have departed from the direct path of reading and are in need of expert study and remedial treatment. The account is useful also because it shows how a school system may be set at work saving poor readers from complete wreckage. Mr. Gray had the co-operation of the public schools of Toledo, Ohio, in working out on an extensive scale the remedial program which he had developed. Superintendent Meek and Miss Wilson, assistant superintendent, organized their teachers so as to carry on remedial work in a number of schools.

The third monograph, as its title indicates, deals with that phase of reading which has in recent years come to be recognized as one of the most important and most neglected aspects of this subject. It is possible through the studies made to distinguish as essentially different in character a number of forms of silent reading. There is reading for general information, and there is minute analytical study in preparation for response to various kinds of questions. Silent reading is no more a single form of reading than is reading in general.

Detailed discriminating studies of the type represented by these investigations undoubtedly will become more common as the

science of education becomes more mature. They go as far beyond the first general tests as the tests go beyond casual observation. Detailed laboratory studies consume more time and energy than do many of the common investigations of a statistical type, but they carry knowledge into the field of inner mental processes, and they will ultimately be the determining considerations in the choice of methods.

DEPARTMENT OF ELEMENTARY SCHOOL PRINCIPALS

A few days after this item reaches the readers of the *Elementary School Journal* the winter meeting of the Department of Elementary School Principals will be in session at Cleveland. Two extracts from the bulletin of this department show the encouraging success with which professional work has been launched by this important group of school officers. These statements ought to operate to bring more members into the department.

The principalship is the most potential station in the school system. We realize this more and more as we unfold the possibilities of our work. It follows therefore that our young department is one of great promise and that this promise will be realized only in so far as we are able to further and to hasten the unfolding.

That we have done this with some measure of success since our inception two years ago is evidenced by the rapid increase in our membership. During that time we have gained over 1,100 members whose professional spirit has secured for us a reputation that is at once a triumph and a challenge. We have made a brilliant beginning, but the challenge will remain for us until the time comes when the principalship shall have reached its fullest capacity for service and the office of the principal has attained a dignity commensurate with its responsibilities. So much for generalities.

We are planning a definite program for this year. At the Boston meeting of the National Education Association our department received an appropriation of $2,500 for the furtherance of our research work. This amount is in addition to our own membership dues. It will be seen that the possibilities of our service to the principals of the country will thus be greatly increased by the confidence which the National Education Association has in us, as evidenced by this appropriation.

We shall issue our second yearbook in time for the summer meeting next July, and the professional program at that time will be based upon the contents of the book.

Two thousand copies of our first departmental yearbook were printed in May. At this time—November first—the edition is practically exhausted.

The second yearbook is expected to reach an even larger circle of readers. The high standard of the first volume has attracted a great amount of attention to the publications of the department, and a considerable demand for the second volume is already evident. These conditions make it necessary that the second yearbook shall represent the elementary-school people of the entire country in an outstanding series of highly informative and practical articles.

The second yearbook is to deal with the elementary-school curriculum, giving considerable space to the adaptations which have occurred as a result of testing programs. The material of the volume will be directed especially toward the erection of courses of study in reading and language, although material along other lines will be included. This yearbook will bear a title similar to the following: "The Elementary School Curriculum: Its Development in the Light of the Testing Movement."

EDUCATION AND MOVING PICTURES

At the Boston meeting of the National Education Association, Mr. Will Hays, representing the Motion Picture Producers and Distributors of America, called on the teachers and the superintendents of the country to join in a movement to improve the moral and artistic tone of moving pictures. President Owen later appointed a committee of the Association to consider the relation of education to moving pictures and to make recommendations to the Association on the general policies which should be adopted in this connection.

This committee has been conferring with Mr. Hays and with others in the effort to lay the foundations for the recommendations which it will make. There will be a meeting of the committee at Cleveland during the meeting of the Department of Superintendence, at which time the whole matter will be fully discussed. All of the members of the committee will be glad to receive suggestions from anyone interested. The full list is as follows: Leonard P. Ayres, Cleveland Trust Company, Cleveland, Ohio; Elizabeth Breckinridge, Louisville Normal School, Louisville, Kentucky; Ernest L. Crandall, 157 East 67th Street, New York City; Susan M. Dorsey, Superintendent of Schools, Los Angeles, California; Elizabeth Hall, Assistant Superintendent of Schools, Minneapolis, Minnesota; Payson Smith, State Commissioner of Education, Boston, Massachusetts; and Charles H. Judd (Chairman), University of Chicago, Chicago, Illinois.

It has developed, in the months which have elapsed since the Boston meeting, that Mr. Hays and those whom he represents are not so anxious as appeared to be the case in Boston to have the educators take an active part in the motion-picture industry. Mr. Hays would be glad to have teachers and superintendents co-operate in the preparation and publication of white lists, that is, lists of films which can be recommended as good. Mr. Hays would like to arrange, so far as possible, to have educators preview pictures and offer suggestions for their improvement before they are shown to the public. Beyond these types of activity Mr. Hays and his associates are not at the moment able to see their way, at least so far as the so-called entertainment pictures go.

In the field of which they speak as that of pedagogical pictures they are quite willing that educators should go as far as they like. The fact is that no one has been able to make a financial success of pedagogical pictures, and it is very doubtful today, and will be for some time to come, whether this branch of the industry can be so managed as to become flourishing and successful.

The committee of the National Education Association cannot limit itself to previewing and white-listing entertainment pictures and discussing pedagogical films. The motion picture has come to be one of the most important sources of influence over the public mind. The imagination of millions of people is being stimulated every day for better or for worse by this, the chief form of national amusement. It behooves everyone who is interested in the creation of sound attitudes among people at large and especially among pupils to study the problems which motion pictures have created.

There is one demand which ought to be urged and which it may appear to the committee of the National Education Association of major importance to formulate, namely, the demand that more adequate sources of public information about films be created. At the present time the advertisements of moving pictures give no adequate notion of the character of the films. The published accounts in the public press are less explicit and reliable than are the reviews of plays given in theaters. The result is that it is by no means easy to know in advance what kind of a movie one is going to see. The suggestion which is being urged here is, not for

a new system of censorship, nor for the preparation of a list based on someone's personal judgment, but for true advertisements and more information.

Such a suggestion as this must be formulated in concrete detail by some influential body if it is to become effective. It is possible that the National Education Association is the body to sponsor some such program.

This item is written in the hope of stimulating consideration by educators of the problems to which it refers. The committee can use very advantageously ideas on any phase of the matter. Will not teachers and supervisory officers contribute by writing to one or another of its members?

A RATING PLAN FOR TEACHERS

Philadelphia has adopted a plan for rating teachers. The plan is published in the form of a pamphlet of fifteen pages which is intended to acquaint teachers with the nature and purposes of the plan and to supply supervisors and principals with directions for making the ratings.

Superintendent Broome describes in the following paragraphs the origin and purpose of the plan.

> The assignment and promotion of teachers from eligible lists as required by the School Code made necessary the use of a plan for evaluating the efficiency of teachers in service. With the plan that has been in use for this purpose in Philadelphia you are no doubt familiar. The recent legislation in regard to teachers' salaries, together with the supplementary regulations adopted by the State Council of Education, necessitate the extension and elaboration of the present system of rating. A special committee has been at work for many months reviewing the best rating systems in use throughout the country as well as plans developed in current educational literature, with a view to devising a plan adapted to our local needs and adequately to meet the new legal requirements. The following pages contain the result of this committee's work.
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> The plan herewith submitted is put forth at this time, not as a final solution of the problem, but as a basis for practical experiment. As the plan is tried out in practice, teachers and principals will be able to judge of its value and to formulate suggestions for modification and improvement. Opportunity for such constructive criticism will be provided as soon as there has been sufficient time to judge the merits of the plan.

The details of the scale are too lengthy to quote in full. As illustrating the character of the scale, it may be said that instruction is given fifty out of the one hundred points which make up the quantitative part of the scale. Instruction is divided into the following main headings: (1) preparation, (2) teaching technique, and (3) pupils' achievement. Selecting one of these for further illustration, the subtopics under teaching technique are (*a*) class sense, (*b*) motivation, (*c*) balance between development and drill, (*d*) pupil participation, (*e*) skill in questioning, and (*f*) assignment. Finally, in order to give a definite idea of the way the subsections are elaborated the following quotation is taken from page 8 of the pamphlet.

c) Balance between development and drill.
Is the teacher telling or developing the lesson?
What degree of skill does the teacher possess in development?
Is the development a thought-guiding process?
Is the development based on adequate review?
To what extent does the teacher adapt the method of development to the needs of the pupils?
Is the development thorough?
What provision is made for the child who is slower of comprehension than his fellows?
What provision is made for the more rapid child?
Is the development adequate before beginning the drill process?
Does the material selected for drill purposes indicate an understanding on the part of the teacher of the aim of the lesson and the function this material will perform in subsequent education?
Has the teacher a proper sense of values as evidenced in the selection of drill material?
Is the teacher familiar with effective drill devices and skilful in their use?
d) Pupil participation.
How much of the talking is being done by the teacher?
How much of the talking is being done by the pupils?
What proportion of the pupils are taking part in the lesson?
What methods are being used to secure participation of the pupils?
Is the participation of the pupils natural or forced?
What use is being made of the socialized recitation?
To what extent are the pupils permitted to guide the recitation?

FORESTS AND EDUCATION

The item quoted herewith is taken from the *New York Times*. There are a few school systems in the United States which have

made themselves centers, not only for social activities, but also for community business enterprises. There will be need in the future, more than there is now, of developing the resources of communities if there is to be enough support for the most effective types of education. The principle suggested by the following item is as important as the concrete program outlined.

"Build up the schools by building forests," says Dean Franklin Moon of the New York State College of Forestry, Syracuse University. "One of the problems confronting the educators of today is an improvement in the rural-school system and the task of giving the country boy and girl an equal opportunity with city children in preparatory education. A more equitable distribution of the burden of school support and a better prepared teaching personnel, which really means more money, are some of the needs of the country schools.

"The community forest is one solution to this educational problem. Nearly every country in Europe has tested out the town forest and found it a profitable investment. Many towns in the Black Forest have no taxes to pay, and some receive a dividend through the profits from their local forests.

"There is plenty of land in New York for this purpose. We have more than 4,000,000 absolutely idle acres. There are laws on our statute books under which idle land may be acquired for reforesting purposes by the municipality. There are many children to plant trees, and the trees are available in the state tree nurseries. A school that costs $1,200 a year to maintain could be supported on a permanent basis by 120 acres of white pine trees.

"Many of the inequalities and handicaps of country schools could be overcome by reforesting the idle land about them. Thousands of children are being sent out into the world handicapped for their life's work because we are neglecting to provide sufficient revenue for many rural schools through a simple and easily available source—reforestation of idle lands of the neighborhood."

CO-OPERATIVE RESEARCH

At the recent meeting of the Idaho State Teachers' Association held at Boise a State Research Association was organized. This association will be represented at the annual meeting of the State Teachers' Association by a section of the general association. The purpose of the organization is to co-ordinate the various efforts of the school men of the state in the study of the educational problems in their schools. The plans of the organization include an intensive study of four problems agreed upon by the members of the association. The problems to be studied during the coming year are as

follows: (1) "The Educational and Mental Status of the Fifth-Grade Pupil," (2) "The Age-Grade and Years in School Status of the Elementary-School Pupil," (3) "The Devising and Standardizing of an Individual Uniform Cumulative Record Card," and (4) "The Experimental Determination of the Efficiency of Methods of Teaching Spelling." During the past few years several studies of research character have been undertaken in different sections of the state, but the results have not been pooled in such a way as to supply information to the school people of the state. It is hoped that the new research association will accomplish this purpose. C. L. Harlan, of Lewiston, is president and L. A. Thomas, of Lewisville, is secretary.

A CITY GUIDE BOOK AS A SCHOOL PROJECT

The following is the introduction to a guide book of the city of Cleveland prepared by the pupils of the Empire Junior High School.

This guide book is an educational project which was worked out in the academic and industrial classes of our school. The English, history, and geography departments of the seventh grade compiled the subject-matter as regular class work. Several eighth-grade classes assisted with the history section.

The typewriting department prepared copy for the printers. The type was set by regular eighth and ninth-grade printing classes, and the printing was done by the same pupils. A considerable amount of proofreading was done as class work.

The cover design is a product of the applied arts department. Seventh-grade classes compiled the index. And this book was bound by a seven A grade pupil.

The book was planned and finished within a year.

The book is an attractive volume of the size to fit in one's pocket and is made up of 118 pages and a map of the city. It contains historical sketches, descriptions of prominent parts of the city, directions to strangers, lists of the leading business establishments, and accounts of the recreational and social opportunities offered to visitors and inhabitants. No one can doubt the genuine educational value of such a study of the city as the pupils of the Empire Junior High School must have made in preparing the volume.

There is one passage which gives so vivid and compact an example of the best kind of history of education that it is worth reproducing.

The New Englanders who became the early settlers of Cleveland brought with them a desire for education, and the pioneer schools which were established soon after their arrival laid foundation for the present great school system of Cleveland.

In 1800, a school was established on the ridge road near Kingsbury Run in Newburgh. Sarah Doan, a daughter of Nathaniel Doan, was the teacher. In 1802, Anna Spafford opened a school for the children of the settlement in Lorenzo Carter's cabin. Asel Adams who conducted a school in a log cabin near the foot of Superior Street was paid ten dollars per month by his patrons. His salary was payable in money or in wheat, according to the terms of the contract.

The first schools were private institutions that were open only to those persons who could afford to pay the small tuition fee. However, a charity school that was supported by public subscription was established about 1834. This school was attended only by the very poorest children.

An ordinance for the establishment of public schools was passed by the city council in 1837. The first free schools were held in rented rooms and buildings, and the boys and the girls were kept separate in all classes.

The council, in 1839, purchased two lots, one on Prospect Avenue, and the other on Rockwell Street (E. 6th St.). Buildings were put up on those lots and opened in 1840. About one thousand pupils enrolled.

In 1846, a high school for boys only, the first high school west of the Alleghanies, was opened in the basement of a church on Prospect Street. A department for girls was opened in 1847. The establishment of this high school brought much objection from the taxpayers who favored elementary education but not the higher schools. This school which developed into what is now known as Central High School celebrated its seventy-fifth anniversary in the spring of 1921.

SOME CONSTRUCTIVE PRINCIPLES OF REORGANIZATION

CHARLES H. JUDD
University of Chicago

The earlier articles of this series have traced in some detail a number of changes which have taken place in the American educational system as a result of expansion, and have made the plea that a systematic program of reconstruction be substituted for the series of reforms which the accidents of social progress have stimulated. It now becomes our duty to discover, if possible, some of the principles which should guide reorganization.

There is an American attitude toward education which is so unique in the world's history and so important in its consequences that it suggests a cardinal principle for the new school system which seems to be emerging. This attitude may be formulated in the statement that every pupil in American schools is to be given at public expense all of the educational opportunities that his personal energy and personal circumstances will permit. Put in other terms, this American attitude demands the opportunity of a higher education for everybody.

In Europe there is no such attitude. Many of the older civilizations have gone much farther than ours in providing for universal training in the rudimentary subjects. Indeed, the European nations have, in some cases, passed us by far in the reduction of illiteracy and in the enforcement of compulsory elementary schooling. But Europe has never remotely conceived of the plan of a universal higher education. The upper classes of society have assumed that they have a right to retain for themselves and their children a monopoly of educational privilege. The common people are to be educated, to be sure, but only within well-defined limits. There is to be no open door leading freely into the secondary and higher schools.

The American attitude, that all may have a higher education if they will accept it, has gradually come to be something more than

a vague ideal. There is evidence in abundance that the nation from its earliest days had the spirit of democratic organization of schools, but the process of actually building up a free high-school system was very slow; and even slower was the process of training the youth of the land to accept the opportunity offered by these free schools.

The clearly conscious acceptance of the principle of a universal higher education is an achievement of the last two decades. Prior to 1900 there was only a small fraction of the total population in attendance on high schools. Today more than one-third of the population of high-school age is attending these institutions, and in many urban regions the fraction is twice as large.

The immediate consequences of the facts thus recited can be traced in the organization of public schools of all grades. An earlier article has pointed out the vast changes which have come in the teaching of reading. Let us see how the expectation of a universal higher education affects this single line of school activity.

Let us try first to imagine the attitude of a teacher who teaches pupils to read but has no expectation that they will be called on in later life to make any extensive use of reading. Let us try then to imagine by contrast the attitude of a teacher who thinks of reading as a means of access to science, history, literature, and practical information. Is it not evident at once that the expectations of the two types of teacher will determine their methods of teaching and the standards of achievement which they respectively adopt as satisfactory for their pupils? The teacher with meager expectations will feel no urge to accomplish the tasks of instruction with dispatch because reading is an end in itself and leads to nothing in particular beyond. The teacher with meager expectations will not be especially concerned about the value for later intellectual life of the reading materials used in the school. The whole process of teaching reading will be lacking in the enthusiasm and push which stimulate the teacher with broader expectations. The teacher with expectations of higher education constantly in mind will seek methods which are effective in bringing pupils to independent power in reading at the earliest possible moment. This teacher will be on the alert to note any change in the pupils indicative of progress. The whole atmosphere of the schoolroom will be forward looking and progressive.

One could use other illustrations than reading with perhaps even more striking effects of contrast. The teacher who thinks of spelling as an independent and final achievement will be content to lavish on useless combinations of letters time and attention which the progressive teacher will try to save for productive study of informational subjects. The forward-looking teacher will think of the spelling lesson as an opportunity to increase the vocabulary of the pupils and to teach them the structure and meaning of new words.

The teacher of narrow expectations will revel in arithmetic as a most fortunate opportunity for endless permutations of number drills. A certain type of arithmetic teaching will flourish under the influence of the idea that arithmetic is an end in and of itself. This is exactly what happened in the district school of two generations ago and is happening yet in those American schools where the principle that every pupil is to go on to higher education has not penetrated.

Where the American principle of a universal higher education has been grasped and adopted, a transformation has taken place in every branch of teaching and in every aspect of discipline. The goals of teaching are now set in terms of the useful habits which pupils need for the higher achievements of intellectual and social life. There is no contentment with formal knowledge and formal skill in childish arts. Training is for the larger purposes of life.

The matter can be formulated as follows. The modern school assumes that the pupil is ultimately to be introduced to all of the intellectual arts and to all of the practical skills which he is fitted by natural ability to take on. The goal of his education is thus set in terms of a complete and broad education. The problem of any particular grade is then to carry the pupil as far on the road toward his final education as the maturity of his body and mind will permit. The subjects of instruction are merely means to this personal development. The fitting together of the different subjects is controlled entirely by the purpose of promoting the best development of the pupil.

Education becomes, under these conditions, not a problem of assigning a pupil to some grade and keeping him there until he has absolved a series of set tasks, but rather a matter of discovering the best means of promoting personal progress. If the general physical

and social maturity of the pupil dictates that he study with companions under the close supervision of a teacher who knows intimately his personal characteristics, the school will have to provide such an environment. If later the physical and social maturity of the individual is such that he needs to be allowed the opportunity of following his personal bent toward some form of specialized training, the school will have to organize its administration so that specialization will be possible.

It has become increasingly clear during the last few years that the school will have to redefine itself in such a way as to recognize the maturity of its pupils as the chief basis of its organization. It will have to abandon all of those forms of organization which were derived from older distinctions of social class and from artificial distinctions between types of intellectual endeavor.

To be concrete, there is absolutely no justification, under the conception of education which it has been the purpose of this paper to set forth, for the contention that the high school is intended for superior people. There can be no distinction in social rights which tends to make algebra or Latin, for example, the hall mark of social superiority. If the high school is in any way to be marked off from the elementary school, it must be shown that the two types of institution minister each in its unique way to certain stages of maturity. The subjects of instruction must be rearranged in such a way that the topics are apportioned to the high school and the elementary school on the basis of their appropriateness to certain types of maturity.

Other concrete cases can be found in the field of literature. The time was when the elementary school was supposed to be content with stories and brief excerpts from English classics. The high school was the sole and rightful possessor of literary selections in the strict sense of that term. Modern schools recognize the impossibility of maintaining any such artificial distinctions. The elementary school is justified in using any of the examples of English literature which it finds adapted to the maturity of its pupils, and the lines of demarcation between elementary-school reading and high-school literature are fast disappearing. This may cause some dissatisfaction among those who have classified subjects under traditional canons, but the time is past when classification of subjects of instruction based on traditional lines can be defended.

What is true about subjects of instruction is equally true about forms of classroom management and about school management in general. It used to be true that the pupil passing from the elementary school to the high school left an environment of the closest surveillance for an environment of suddenly acquired freedom. The high school was supposed to be the home of responsible youths able to guide themselves in such matters as movement from classroom to classroom and in such matters as recreation and study. Elementary-school pupils were thought of throughout their whole careers in the eight grades as immature and incapable of self-direction. Of course, it has never been true that human nature made any such sudden leaps as the change from one school to another seems to imply. We recognize now the facts with regard to human nature, and we are beginning to organize the schools with full understanding of the fact that pupils gradually develop responsible attitudes and that the elementary school is the place where the cultivation of responsibility will have to begin.

What has been said about the high school and the elementary school has been intended to formulate in concrete terms the conviction which has been crystallizing in all of the progressive school systems of the country that the break between the eighth and the ninth grades is artificial, traditional, and utterly indefensible.

It is unfortunately not possible to say that the break is recognized by all teachers as a thing of the past. Various groups of educational people have in their day tried to maintain the older classification of grades and the high school and to perpetuate by institutional devices all of the traditions that marked off these schools from each other. Opposition to the elimination of the break came first from elementary-school officers who thought that the recognition of pupil maturity as a basis of school organization was going to deprive the elementary school of an important part of its constituency. Just at present it is the high school which is blockading the reconstruction of the school system. High-school officers are trying to hold the ninth grade true to tradition and are opposing any and every move that will tend to detach from their four years of control any part of their student body.

In the meantime, the people who send their children to school are not quite sure how to provide the one thing which they want.

They want the children to have all of the education which can be given, and they want the opportunity to be administered in the most economical and efficient way possible. They are afraid to sanction any reorganization for fear that some of the more advanced privileges will be denied them. Therefore, they favor keeping the high school and equipping it as fully as possible. On the other hand, they are quite sure that the elementary school, as traditionally organized, is not giving the pupils all that it should, and so they are critical of this school and eager to see it reorganized.

There is another series of purely administrative considerations which greatly complicate the situation—the considerations which arise from the annual-promotion and long-vacation plans of school organization universal throughout the United States. Our schools are compelled, under their form of organization, to make artificial breaks in the child's training. Not only so, but they are compelled to spend much valuable time in trying to repair the losses suffered from the protracted suspension of school activity during the long vacation.

Here again the older and more formal attitude toward the organization of the course of study relieved the teacher of difficulties. One can cut up arithmetic and spelling and even handwriting into a certain number of exercises and assign certain of these to each week in the school calendar, if one is willing to ignore the relation of these exercises to pupil maturity. After one has thus divided up the subjects, one may even rearrange them so that they fit roughly the needs of the average pupil. The program of work thus outlined will move very slowly because it will encounter a great deal of friction at many points, but it will be workable, and it will be concrete and tangible enough to be inspected and supervised and administered by people who do not care to devote themselves to anything but routine. There can be no doubt at all that a time table made up of carefully tried-out units can be put through as laid out. There may be some doubt about how much such a formal time table benefits pupils, but it is easy of administration, and that is something which teachers in charge of crowded rooms have had to consider.

Perhaps the American elementary school might have gone on its way, as European common schools have, generation after gener-

ation, without radical change if it had not been for the troublesome tendency of a democratic school to expand. If American common folks had been content, as the peasants who stayed in Europe have been, to let their children go to a limited school which gives a little instruction in a few rudimentary subjects, then the eight-year elementary school of sacred memory in American history might have continued unchanged. But Americans are restless and in favor of expansion. So they have sent their children to the schools and have told them to stay there until they got all that there is in the way of training. To be sure, there has often been a very shallow and selfish social reason for some of our American ambition for our children. There has often been a great deal of the purely competitive motive of not letting anyone get more than we get, but nevertheless our schools have expanded and our ideal of a universal higher education has come to be a dominant national ambition.

This being as it is, the educators of the country may as well recognize the fact that the old days of complacence with a leisurely eight-year elementary school, to be followed by an exclusive four-year high school, are past. It is not appropriate in this series of articles to elaborate the statement, but it is equally true that the four years of socially pleasant but educationally indefensible general education administered by the American college is undergoing a rapid and wholesome change and is becoming a period of productive specialized training for practical life.

All of the evidences point to the conclusion that American education has come to a turning-point. The distinctions of the past will have to give way. There is a new principle steadily assuming increasing importance and destined to exercise ultimately decisive influence in school organization. It is the principle of a universal higher education and a distribution of instructional material according to pupil maturity.

One illustration may be used to show in a concrete way the general direction of reorganization which is to be expected from the application of the principle thus formulated.

At the present time there is no guiding motive in control of the activities of the seventh, eighth, and ninth grades. The teachers in these grades gather up some of the unfinished fragments of elementary-school subjects and some of the introductory phases

of high-school subjects and, with the aid of reviews and what are vaguely called exploratory studies, patch together a heterogeneous mass of material with which they try to keep pupils in order.

One sometimes wishes that it were possible to begin without any traditions and start a program for some new ideal seventh grade, unembarrassed by any of the devices with which teachers have tried to solve the problems of this grade. Since it is not possible to do this in fact, one may legitimately use one's imagination for the purpose for which it was given, namely, for the purpose of setting aside all of those practical obstacles which prevent one from inaugurating real reforms on an extensive scale.

In imagination it is perfectly simple to construct a highly productive program for Grades VII to IX. One has only to recall that the pupil from the sixth grade of a progressive modern school can read well and has been introduced to the geography of the world. This pupil knows the fundamentals of arithmetic and some of its complicated processes. He can write a fair hand, and he has the power of telling simple stories and making simple statements of fact in the vernacular.

This pupil is just at the point where he begins to look over the ridge that divides his childhood from the ambitions of independent personal life. He is not an adult, but he begins to feel the stirrings of an ambition to be a contributor to the world's economic productivity and to be an influence in the social group to which he belongs.

It seems very easy to decide what to make the backbone of the curriculum for such a pupil. It is that toward which the schools have been rapidly moving in recent years, a rich program of social materials. The descriptions and explanations of industry which the child sees as his individual opportunity ought to be made problems for school reading. The accounts of peoples and of historical characters ought to prepare the way for the more abstract studies to be taken up later when institutions are to be made clear to the student as the outgrowths of the efforts of people to live together and live well. Natural science should be taught from the point of view of man's effort to master nature and use it for the upbuilding of society.

Courses of study based in this broad way on the effort to understand society will not lack in opportunity for the use of language. Indeed, much of the artificiality of language and reading exercises of the common sort will naturally fall away as soon as the curriculum conforms to the demands of pupil maturity.

The statement of the case for a new social studies program for Grades VII to IX can be reinforced from many sides. Without attempting to go into detail, we may properly indicate several lines of argument which are certainly appropriate and which seem to contribute to two conclusions: first, that a new program is needed, and, second, that this program should have a core of social studies.

Negatively, it can be argued that the traditional program for the upper grades and for the first year of the high school is not accepted as satisfactory. There is great restlessness among teachers and a marked tendency on the part of pupils to withdraw whenever they are subjected to the traditional types of courses in these grades.

Negatively, again, there is no substitute for the present program which is generally accepted. The program of industrial training or prevocational training which has sometimes been proposed seems unstimulating and is open to the criticism that it exploits pupils. The suggestion of an exploratory series of courses lacks definiteness of aim and procedure and is likely to lack unity and coherence. It is open in some instances to the criticism that it seriously distracts pupils by its kaleidoscopic succession of experiences. The proposal that high-school courses be brought down and substituted for the traditional courses of the upper grades fails to meet the criticism which must be made against the traditional high-school courses that they do not now hold pupils any more than does the traditional elementary program of the grades.

The conclusions of our negative arguments is that any reasonable experiment is worth considering.

On the positive side, a strong practical argument can be presented to the effect that pupils of twelve years of age very much need to be prepared for an intelligent entrance into their social duties. This preparation requires time and cannot safely be postponed to the period when social duties will actually have to be taken up. It is

an urgent duty which the schools must perform to prepare pupils for modern complex social life.

It can be further argued that the need for a course not traditionally provided in the schools has steadily increased in recent years because of the growing complexity of modern life. Since the fundamental demands of elementary education cannot be set aside in order to supply the introduction into complex social life, it follows that courses which will explain society should be introduced as early as possible in the school curriculum after the fundamentals and yet in time to reach the rank and file of the population. Certainly the task of teaching about society should not be postponed beyond the seventh grade.

Social studies furnish peculiarly advantageous opportunities to prepare pupils for the transition from elementary-school conditions to the increased responsibilities and freedom of the high school. From purely institutional considerations, therefore, the school may well undertake to train pupils in the understanding of their more mature obligations.

Such arguments as these reinforce the major argument that pupils of twelve years of age are at the stage of maturity where they need social studies more than they need any other kind of intellectual material.

The program which these arguments aim to justify is by no means as imaginary as it may seem to many who are absorbed in the administration of traditional courses in the seventh, eighth, and ninth grades. The movement is well under way to develop a junior high school which shall be characteristically a school introducing pupils to contemporary social life. The formula which will ultimately define the junior high school is not a definition drawn from common or average practice; it is a principle which arises naturally from the demands of the modern expanding school system. That principle is one of universal higher education, the first level of which shall deal with social conditions into which the maturing pupil must shortly make his way.

THE STUDY CONFERENCE AS AN AID TO SUPERVISION

P. R. SPENCER
Superintendent of Schools, St. Cloud, Minnesota

The supervisor's work is largely that of training teachers. She must instruct her teachers in the use of improved methods and in the use of the results of educational and intelligence tests in order to increase the efficiency of their work. The most important work of the supervisor is to continue the education of the teacher beyond her normal-school and college training and to bring to her attention improvements in methods and technique of education.

One of the problems of the supervisor is how and when she can best do her work. Much can be done through personal conferences, teachers' meetings, and the reading by the teacher of educational literature suggested by the supervisor. However, the amount of time outside of school hours that supervisors can ask of teachers for meetings and professional reading has a limit beyond which it is not fair to go.

In the school system of St. Cloud, Minnesota, there are four people supervising the work of the teachers in the first six grades. One of these supervisors meets the teachers every three weeks, and the other three meet them every six weeks. Aside from these meetings, there are frequent conferences. In connection with the meetings the teachers are asked to do considerable professional reading. Almost without exception, the teachers spend the half-hour before school in getting work in order for the day and from an hour to an hour and a half after school in preparing work for the next day. Both supervisors and teachers feel that about all that can be well accomplished is being required. There is no spirit of shirking among the teachers. They welcome suggestions, and many of them are continually coming to the professional library to ask for books and articles that will be of assistance to them in their work. The general professional spirit of the teaching corps is

high. The teachers' professional reading, conferences, and meetings are getting results, but they are arrived at too slowly. This method of professional improvement would be adequate provided the teaching force remained constant. However, in St. Cloud, as in almost every school system in the country, the teaching force is a constantly changing one. Each year, to a certain extent, the work of the supervisors must begin all over again. It is not until the school year is well advanced that the teaching corps can be welded together and be made to function as an efficient unit.

Some sort of preliminary work on the part of the teachers and the supervisory force, prior to the opening of school each autumn, would do much to enable them to start their entire program of work without delay. Superintendents of city schools and county superintendents have felt this need and have tried to meet it with institutes. In a number of city school systems two- or three-day institutes are held at which outside educators discuss various educational topics. In many counties institutes are held for the rural teachers in the first month or two of the school year at which are discussed topics which, in the judgment of the county or state educational authorities, need to be emphasized.

The writer has tried a plan that may not be wholly new but which, with further development, may help to solve the serious difficulties of the supervisor. He consulted the supervisors and the principals of the junior and senior high schools to get their judgment with reference to asking the teachers to come back the week before school opened for the purpose of having a study week which would be conducted by the supervisors and principals. They agreed that it was an experiment worth trying, provided the teachers were willing. When the plan was presented to the teachers there were a few who objected, but the great majority expressed themselves as willing to try it. By way of explanation, it may be well to say that the school term is but nine months in length and that the teachers are paid in twelve monthly instalments, which may have had much to do with the teachers' willingness to try the experiment.

The work of the week covering five days was conducted on the plan of a school day with discussion and study periods. The teachers of the first three grades were placed in one group, and those

of the fourth, fifth, and sixth grades in another. Each supervisor took some particular phase of her work for study and discussion. The grade supervisor in a neighboring city, who was asked to assist, took charge of the fourth-, fifth-, and sixth-grade teachers in geography and history. The local grade supervisor gave instruction in the recent developments in silent reading, using as the basis of the study the two recent monographs on reading[1] published by the Department of Education of the University of Chicago. The art supervisor worked with the two groups of teachers on the industrial arts course that was being developed in the system. The music supervisor took up various phases of the teaching of music, and the physical training supervisor worked with the groups studying the supervision of play. A regular schedule of study and discussion periods was adhered to. The teachers met at the high school, and work began at 9:00 A.M. and continued until noon. An hour was given for lunch at the high-school cafeteria. At 1:00 P.M. work was resumed and continued until 4:30. No one was asked to do any work after that hour.

The junior and senior high school teachers combined were divided into departmental groups representing English, science, social science, mathematics, and manual arts. The object of these various groups was to set up certain objectives for the different subjects and to lay plans for work during the year on a course of study for the junior and senior high schools. A suggested outline with references, which had been previously prepared, was provided for each group, together with a copy of Bobbitt's *Curriculum-Making in Los Angeles*.[2] The groups were left free to work as they saw fit. No definite program as to hours was made, each group being given a room with a large table and reference material. One period during the day was devoted to a general meeting of all of

[1] Guy Thomas Buswell, *Fundamental Reading Habits: A Study of Their Development*. Supplementary Educational Monographs, No. 21. Pp. xiv+150. William Scott Gray, with the co-operation of Delia Kibbe, Laura Lucas, and Lawrence William Miller, *Remedial Cases in Reading: Their Diagnosis and Treatment*. Supplementary Educational Monographs, No. 22. Pp. viii+208. Chicago: Department of Education, University of Chicago, 1922.

[2] Franklin Bobbitt, *Curriculum-Making in Los Angeles*. Supplementary Educational Monographs, No. 20. Chicago: Department of Education, University of Chicago, 1922. Pp. vi+106.

the teachers for the purpose of discussing a revision of the marking system and matters of a routine nature that were related to the organization and administration of the school.

The results of the study week exceeded the expectations of everyone. The new teachers became acquainted with the old teachers, and there was a general feeling that much had been gained from the study of the various problems discussed. The teachers of the junior and senior high schools in each group decided to continue the group meetings throughout the year. Each teacher had a clearer idea of what the other teachers in her department were attempting to accomplish. The various groups signified their intention of working on courses of study for their respective departments. If there was any phase of the week's work that could be improved another year, it would be the number of points of attack. At least for the more experienced teachers, fewer subjects and more thoroughness would, in the long run, be productive of greater results.

The success of this experiment has suggested an idea to the writer which he offers for the consideration and thought of others. School systems for a number of years in the future are likely to be dependent on a teaching body of which a considerable number are new to the system each year. In the smaller school systems, even in cities of 100,000 or more, the new teachers are recruited either directly from teacher-training schools or from other school systems where in many cases there is little attempt to continue the training of the teacher beyond the work which she received in normal school or college. For the average teacher the demands made on her during the school year make it almost impossible for her to keep up professionally as she should. The fact also that the average teacher for the first few years does not look on her work as a permanent life-work may have much to do with hindering her professional growth.

If these conditions are to continue for a number of years, would not a two-week study conference, preceding the opening of school in the fall, go a long way toward introducing the new teacher into the system and making her work function efficiently from the start? Would it not also enable the teachers more easily to keep up with the advance in their profession?

A two-week period would make it possible to attack various educational problems with considerable thoroughness. Improvements and new ideas which the supervisory forces are endeavoring to introduce into the school work often fail or are but half-heartedly accepted and put into practice. The chief reason is, in most cases, a lack of a thorough comprehension of the ideas advanced. Neither the teachers nor the supervisors have the time or the energy to go into the matter with the thoroughness that is desirable.

A study conference might do much to improve the relations between supervisor and teachers. It might be of aid in relieving the feeling of high tension found in the work of many progressive schools.

An important point in the plan is that the work of the study week should be conducted by the supervisory force of the school system. The people who know the local needs and problems are the ones who are in the best position to guide the work.

SOME PRESCHOOL AND ELEMENTARY-SCHOOL CONTRIBUTIONS TO LATER EMPLOYMENT ADJUSTMENT

E. T. FILBEY
University of Chicago

Early in the last decade disconcerting school retardation, school elimination, and juvenile employment statistics were unearthed by vocational guidance and general education surveys. Analysis of school groups and study of the importance of individual differences gave us character sketches of various types of pupils who groped their law-guarded way through the old elementary school, some helped and some hindered by the numerous social devices forced upon them en route. Surveys told us how these pupils passed over into occupational life, taking with them their innate characteristics modified to some extent for better or for worse, their acquired knowledge frequently expressed in terms of academic failure, their work attitude, and their ability or their inability to face the realities of life. Attempted occupational adjustment indicated the evils of unguided self-distribution. Dissatisfaction, excessive labor turnover, and periods of unemployment gave warning of adult problems more serious in character than those encountered in the juvenile world.

While educators and philanthropists were checking up on the "closed accounts" of the public schools and discussing causes of elimination, failure, and discontent on the juvenile level, employers were becoming aware of the fact that maladjustments in industry were of equally vital importance. Plant surveys paralleled school surveys. They indicated that dissatisfaction and failure to make good, which were emphasized in school elimination and in initial employment experience, appeared again as the two major causes of elimination on the adult level. Mental attitudes seemed to be the crux of the situation in industry. Employment managers attributed from 75 per cent to 90 per cent of turnover and absenteeism to mental attitudes. The fact that 50 per cent of dissatisfaction

was a normal condition on the juvenile level in both school and industry and that this percentage had increased to 75 per cent or 90 per cent in adult occupational life warranted the inference that knowledge of the fundamental causes of discontent was of mutual importance to educator and employer.

Realization of the importance of mental attitudes as factors in unrest and elimination on both juvenile and adult levels prompted a series of investigations which have demonstrated that ability to make adjustments is a legitimate measure of general intelligence, that it is a prerequisite to success in any walk of life, and that development of such ability is a cumulative process. All too often conduct problems ignored in childhood are prophetic of maladjustments in later life. Professor Bott well says:

> In industry where the children of today are workers of tomorrow the convictions which are being rooted in their minds now as beginners will be the governing ideas of the future. In the interests of stability, if industry is to be manned by efficient and satisfied workers, it must do its share toward removing difficulties which from the beginning tend to produce or aggravate the opposite result. So long as the entrance of juvenile workers into jobs remains as at present without direction, the outcome will likewise remain a matter of chance.
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> The home and the school are even more important as the early training ground of our workers. If a lively sense of responsibility, loyalty, and fair-play is not established there, if the pre-industrial experience of the child fails to produce a conviction that success and reward depend ultimately upon service rendered, then the evil result will appear in industry to the cost moreover of those who are not directly responsible. The moulding of the child's attitude in matters of work and rewards is a continuous process operating consciously or unconsciously in the atmosphere of the home and the school, and is put to a crucial test on his entering productive industry.[1]

Investigations conducted by the National Committee for Mental Hygiene furnish much scientific information regarding the continuity of adjustment problems as they appear in the home, school, business, industry, and social life. Dr. Kenworthy traces the origin of various forms of juvenile dissatisfaction in the home and in the school,[2] and Professor Robert Macdougal continues the

[1] E. A. Bott, *Juvenile Employment in Relation to Public Schools and Industries in Toronto*, pp. 9–10. University of Toronto Studies, Psychological Series, Vol. IV; Studies in Industrial Psychology, No. 2.

[2] Marion E. Kenworthy, "Extra-medical Service in the Management of Misconduct Problems in Children," *Mental Hygiene*, V (October, 1921), 724–35.

investigation relative to industrial discontent.[1] The misfit in industry and the misfit in school are found to be equally serious problems. Repeated failures are common in both fields, and repeated failures tend to destroy morale. Similar studies confirm the findings of Dr. Kenworthy and Professor Macdougal. Other students of mental hygiene fix the responsibility for maladjustments and indicate remedial measures.

Mental hygiene must begin with the very first days of the infant's life, for only as, throughout the years of infancy and early childhood, those precautions are taken and those measures are observed which make for healthy-mindedness in its most fundamental and significant sense will we be able to make any appreciable headway against the ever-increasing crop of adult failures, mediocre attainment, delinquency and irresponsibility, and the various kinds of mental and physical diseases that grow out of psychological conditions and causes. Nor need we be baffled by any sort of abstract idea about what constitutes the essentials of an environment that make for mental health. The orderly, obedient, controlled, well-poised nature—the nature that is able to face reality with upstanding courage instead of turning from reality to live a life of phantasy, the nature that does not shrink from the world of facts with timidity and a craving for a soft place and a pleasant berth, that is able to take criticism and direction, that controls feeling by intelligence, standing foursquare to every wind that blows—this sort of nature must be provided for in the infant days, and its foundations laid by the very atmosphere that surrounds the child. And this atmosphere is no subtle, indefinable, and vague abstraction; it is the sum total of the habits of ongoing in the hourly care of and association with the child, in the manner of his being handled and dressed and fed and bathed, in the attitudes of his elders in every matter that may come up in his presence, in their moods as they are about him, in their own ways of meeting every incident in life, be it great or small. Too much emphasis cannot be laid upon the fact that it is out of the commonplace, everyday, matter-of-fact experiences of the child that come the various characteristics that form his personality and that determine the nature of its expression in later years. The world of parents and teachers needs to learn this lesson above all other—that nothing dare be considered of no moment in the life of the child merely because to the adult it is of no special interest or importance, or merely because it is the experience of a child and therefore cannot be of any great significance. We must never forget that it is from *his own* reactions to *his own* experiences that he is getting his bent; out of the myriad small happenings of his daily life is being formed

[1] Robert Macdougall, "The Part of Psychology and Psychiatry in Industry," *Industrial Education*, pp. 190–203. Publications of the Society of Industrial Engineers, Vol. IV, No. 1 (January, 1921).

that great dynamic source of motivation, the unconscious, which will ever wield so powerful an influence throughout his later life for good or for ill in determining his choices, tastes, judgments, and reactions. . . . .

Let the attitude of parents and adult members of the family toward their daily occupations at home or in office be that of dread or boredom, of dislike or contempt, let real joy and spontaneity of manner and lightness of heart appear only when the holiday, the rest hour, the game, or the diversion are being spoken of or experienced, and the child begins the formation in his nature of attitudes toward work that must be utterly eradicated later if he is ever to find himself in his work as an adult, if he is ever to make his work, whatsoever it may happen to be, that in which his nature finds nourishment and contentment and satisfying expression. And when mother or father finds the growing boy or girl avoiding work, hating to do the errands and take any of the small responsibilities about the home, they are all too prone to lay this to "natural" laziness in human nature, instead of realizing that they are reaping what they in large measure unwittingly sowed in his nature by their own daily feeling reactions to their duties and occupations, their cares and responsibilities. Healthy-mindedness toward work and toward responsibility must be engendered and fostered in the child's nature in exactly the same way in which reverence and courtesy are engendered and fostered—namely, by the attitudes of the adult who have the child in their charge.[1]

Because of the difficulty of differentiating between the responsibility of the home, the school, and industry, any effort looking toward the prevention of maladjustments or toward their solution, which may be made by one of these agencies, has a direct bearing on the problems of the others. The elementary school, standing as it does between home and employment, or between home and high school, occupies a strategic position in this particular respect. It should find its major field for guidance service in stressing the type of character development which minimizes opportunity for maladjustments and at the same time cultivates ability to make adjustments. If the home, during the preschool period, has succeeded in developing healthful habits of thought and in counteracting tendencies toward unwholesome mental attitudes, then the elementary school becomes an important co-operating agency in fostering and in increasing personal qualities which will make for ease in adjustment. If the home has neglected its responsibility, then the school,

[1] Margaret J. Hamilton, "Mental Hygiene and the Parasite," *Mental Hygiene*, V (January, 1921), 47–50. Marianna Taylor, "The Child and the Home: an Extract from a Survey of Mental Health Conditions in a Metropolitan District," *ibid.*, VI (October, 1922), 746–72.

in addition to its usual functions, must assume initiative in the treatment of undesirable tendencies originating in the preschool period. Dr. Paton tells us that many pupils leave school without any intimation of the basis on which successful adjustment depends. From his point of view, the essentials of an education are:

> (1) a knowledge of actual life, (2) a definite impelling interest in some special phase of life, (3) information gained from actual experience of a person's own adjusting capacity and limitations, and (4) the cultivation of the emotional attitudes and habits required for recognizing and facing reality. . . . .
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> People who have acquired the essentials of an education are insured against nervous breakdowns, do not occupy positions they are not qualified to fill, are not intoxicated by intemperate idealism, do not develop a psychology of life based upon personal grouches or make the fatal mistake of persuading themselves that their own pronounced defense reactions against reality are virtues.[1]

Since responsibility for the development of personal qualities which make possible effective community adjustments is the joint function of home, school, and industry, to what extent is factual evidence being interpreted in terms of preventive or constructive programs?

The psychological significance of the preschool age is receiving increasing attention. Intelligent parents and progressive teachers are familiarizing themselves with the growing body of literature which emphasizes the importance of childhood relative to all types of adjustment. Much of this literature is available through the medium of periodicals, especially *Mental Hygiene*, from which a number of passages have been quoted.[2]

The fact that the Committee on Educational Policies of the American Association of University Women is considering a "program of education for the preschool child" as a suitable research topic for the organization, is indicative of the strength

[1] Stewart Paton, "The Essentials of an Education," *Mental Hygiene*, IV (April, 1920), 268–70.

[2] Additional references include:

W. A. White, "Childhood: The Golden Period for Mental Hygiene," *ibid.*, pp. 257–67.

C. Macfie Campbell, "The Experiences of the Child: How They Affect Character and Behavior," *ibid.*, pp. 312–19.

Douglas A. Thom, "Habit Clinics for Children of the Preschool Age," *ibid.*, VI (July, 1922), 463–70.

of the appeal which this subject is making to organized intellectual leadership among women.

The first topic which we have to suggest for investigation by the educational secretary, and the one which seems to us to hold the greatest promise, needs a little elaboration because it may seem to some of you like a radical departure from previous interests of this Association. It is the possibility for college women to make a really scientific contribution to a program of education for the preschool child between the ages of two and five years. So far there is in this country no organized educational endeavor for children of this period. Modern psychology and psychiatry have convinced us that these early years are exceedingly important ones from the point of view of the formation of physical habits, mental habits, and elements of character and personality—far more important than we have been supposing. If so, our educational system, which makes no provision whatever for these years, is very faulty. Not only is there no provision in the system for the training of the children, but there is also no adequate provision for the training of the future mothers in the care and management of small children. The college trained mother approaches the task of providing a wise educational environment for her young children with no more specific preparation for it than the mother whose education ended with the elementary school.[1]

Some practical experiments looking toward preschool educational service have been instituted,[2] and it is to be hoped that as time goes on the average home will be better prepared to make a contribution to education for adjustment and that closer co-operation in this field between the home and the elementary school may result.

Available literature on behavior adjustment through the medium of the elementary school equals or exceeds that which is available for the preschool age. Much of this material emphasizes the great opportunity and responsibility of the school for individual adjustment during the period when the mind is most impressionable

[1] "Report of the Committee on Educational Policies," *Journal of the American Association of University Women*, XV (July, 1922), 109.

[2] Baby Hygiene Association of Boston, under whose auspices Dr. Thom's investigations of undesirable methods of solving daily problems have been conducted. See *Mental Hygiene*, VI (July, 1922) 463–70.

The Preschool Laboratory of the Iowa Child Welfare Station.

"Training and Management of the Infant and Preschool Child," *Child Care and Child Welfare*, pp. 344–50. Federal Board for Vocational Education Bulletin No. 65 (October, 1921).

Nina Vandewalker, "Some Experiments in Preschool Education," *School Life* VIII (November, 1922), 49–50, 64.

and most ready to form habits of permanent value. It also traces sources of discontent, dissatisfaction, and unrest and indicates methods which may be useful in assisting and guiding developing personalities.[1] Organized personnel departments as a factor in the conduct of public education are far in the future, but recognition of the continuity of the personnel problem indicates that the foundation for the introduction of such departments is gradually being laid and, in a few instances, co-operatively laid by education and industry.

Personnel departments in industry, which handle personality problems on the adult level but under whose jurisdiction there are also many junior workers, are probing the original sources of their labor supply and are seeking personality facts relative to the educational product as it enters the labor market. School and industry have a mutual interest in learning why so many young workers enter upon employment experience branded as failures, seconds, or damaged goods. As a people, we are beginning to realize that the *juvenile personnel problem, as it was revealed in early surveys, has grown up.* A personnel movement, on a scientific basis, is under way. A literature of personnel management is slowly evolving. One of the most characteristic features of the movement is recognition of the need of better methods of dealing with the development and utilization of mental capacities both in school and in industry. A most significant step in the direction of co-operative study of personnel problems has been taken by the National Personnel Association. In the Report of its Committee on Industrial and Public School Relations, presented to the organ-

[1] Walter E. Fernald, "The Inauguration of a State-wide Public-School Mental Clinic in Massachusetts," *Mental Hygiene*, VI (July, 1922), 471–86.

Esther Loring Richards, "The Elementary School and the Individual Child," *ibid.*, V (October, 1921), 707–19.

A. L. Jacoby, "Mental Hygiene Problems of Maladjusted Children as Seen in a Public Clinic," *ibid.*, pp. 813–19.

Marion E. Kenworthy, "Extra-medical Service in the Management of Misconduct Problems in Children," *ibid.*, pp. 724–35.

Esther Loring Richards, "Some Adaptive Difficulties Found in School Children," *ibid.*, IV (April, 1920), 331–63.

"The Iowa Plan, $20,000 Award," *Character Education Methods.* Washington: Character Education Institution, 1922.

ization November 8–10, 1922, we find an "Analysis of Individual Development" which presents in outline form the "functions of the home, school, and industry, as they contribute to the development of the individual for his life's work." The outline comprises physical, mental, and spiritual development and includes the personal characteristics about which most problems of adjustment may be grouped.[1]

In view of the fact that there is verifiable evidence of an alarmingly close relationship between school discontent and failure and industrial discontent and failure, in view of the fact that personality adjustment seems to point the way toward reduction of both evils, and in view of the fact that genuine co-operation between education and industry is actually in sight, it would seem that the most significant contribution of the preschool and elementary-school period to the problem of employment adjustment would lie in recognition of the need for continuous, systematic treatment of personality and character factors and in carrying forward practical experimentation along this line.

[1] *Report of the Committee on Industrial and Public School Relations*, p. 7. New York: National Personnel Association, 1922.

A BASIC LIST OF PHONICS FOR GRADES I AND II

MABEL VOGEL, EMMA JAYCOX, AND CARLETON W. WASHBURNE
Winnetka Public Schools, Winnetka, Illinois

What phonograms will be most helpful to children in sounding out new words? Heretofore this question has been answered on the basis of guess work. Even Thorndike, in showing the words included under certain phonograms, gives no statistical justification for his *selection* of phonograms.

The whole purpose of teaching phonograms rather than merely the alphabet is to make it possible for children to recognize such letter groupings as occur in many commonly used words. An investigation as to the relative importance of such letter groupings is necessary in order to know which ones to teach. Such an investigation has been made during the past two years by a group of primary teachers in the Winnetka public schools.

The determination of the phonograms to be taught in the first grade was begun before a similar study for the second grade but was completed later. Three separate studies were made.

The first of these studies yielded results that were not entirely accurate but gave the method of ranking. It consisted of listing all "phonetic" words in seven commonly used primers and first readers. These words were listed according to the phonograms they contained, with the number of times and the number of readers in which the words occurred tabulated after each. The result was a table for each phonogram like Table I.

A study of these tables showed that there were three factors to be considered in ranking the phonograms in the order of importance: the number of *words* in which the phonogram occurred (4 in Table I), the gross number of *times* it occurred (109 in Table I), and the number of *books* in which it occurred (6 in Table I). A further study showed that mere number of words was not of great importance, as a single book with an unusual vocabulary, like

Bailey's *Children's Hour*, could make a large difference in the ranking of the phonograms. The gross number of times a phonogram occurred was also an unsatisfactory criterion, because the same word, like Turkey-Lurkey, might be repeated many times and

TABLE I

ar	Book						
	1	2	3	4	5	6	7
farmer.....	12	6		1	9		
dark.....		4					20
far.....				10	12	2	7
farm.....		25				1	

raise the standing of its phonetic elements out of all proportion to the likelihood of needing these particular elements. Books alone formed a poor criterion as they made many phonograms seem to have the same importance, when other data showed clearly that their importance varied widely.

Finally, a criterion was found which was subject to none of these objections and which has been proved reliable. This is the number of "book-words" in which a phonogram occurs. "Book-words" can best be understood by reference to Table I which shows that "farmer" occurs in four books, "dark" in two, "far" in four, and "farm" in two. The sum of these is twelve. Therefore, the phonogram *ar* would score twelve book-words. The number of book-words is found by scoring each word with the number of different books in which it occurs and adding all such scores under any given phonogram. This serves as a means of showing the probability of occurrence of any phonogram and, as will be shown, is proved reliable by the fact that three ways of attacking the problem yield highly correlating results.

It was not possible to use the ranking of the phonograms from this first study, however, because there was not a clear understanding on the part of all of the investigators as to what made a word "phonetic." Some had listed words which others failed to list.

Consequently the only tangible result of the study was the securing of a *means* of ranking.

At about this time the *Twentieth Yearbook of the National Society for the Study of Education* was published, with its word list from a number of primers and first readers. The second study was carried on entirely by Miss Vogel and was a phonetic analysis of this word list. We disregarded all consideration of what had in the past been considered phonograms. We defined a phonogram as any group of letters consisting of one or more vowels followed by one or more consonants. We might as reasonably have reversed this and defined a phonogram as any letter group made up of one or more consonants followed by one or more vowels, but our own teachers, some of whom had used both methods of teaching, happened to prefer the first method. Those who prefer the second method might make a study similar to ours, counting the consonant-vowel type of phonogram.

Every phonogram (i.e., *every* group of letters beginning with a vowel) occurring in the yearbook list was tabulated according to the number of "book-words" in which it occurred. Altogether, 345 such phonograms were found and ranked, from *er* (as an ending) with 425 book-words down to such phonograms as *ode* with only one book-word. This list might have been used and published.

The teachers participating in the investigation, however, were dissatisfied with the readers listed in the yearbook, feeling that most of them were out of date and old-fashioned. They therefore voted to spend part of their summer vacation in investigating the relative importance of the first fifty of these phonograms in ten of the more modern primers and first readers. The readers selected were *Free and Treadwell Primer*, *Free and Treadwell First Reader*, *Winston Primer*, *Story Steps*, *Work-a-Day Doings*, *Work-a-day Doings on the Farm*, *Progressive Road to Reading*, Book 1, *Barnes Primer*, *Barnes First Reader*, and *Easy Road to Reading*, Book 1.

The result was a slight change in the relative importance of the phonograms. Of the first ten phonograms in the new list, eight were among the first ten of the yearbook list; and of the first twenty-five of the new list, twenty-three were among the first twenty-five of the yearbook list. This indicated (1) that the

method of ranking was reliable and (2) that the phonograms that were important in one group of readers were equally important in an entirely different group of readers; i.e., that the phonograms which were found to rank high in importance are important not only in one group of readers but probably in any group.

Table II shows the first fifty phonograms as arranged after the final study. "Sum of final *e*" in this table means the sum of all

TABLE II

Phonograms	Number of Book-words in New List	Rank in New List	Rank in Year-book List	Phonograms	Number of Book-words in New List	Rank in New List	Rank in Year-book List
Sum of final *e*.....	325	1	1	*ee*.....	51	26.5	32
Sum of *ee*.....	169	2.5	5	Sum of *ea* (bread)..	51	26.5	39.5
ed (ending).....	169	2.5	7	*all*.....	45	28	24
ing (ending).....	145	4	3	*ick*.....	44	29.5	30
er (ending).....	138	5	2	*ake*.....	44	29.5	29
Sum of *ea* (eat)....	135	6	4	Sum of *or*.....	43	31	35.5
Sum of *an*.....	123	7	6	*eep*.....	41	32.5	39.5
Sum of *ou* (our)....	105	8	12	*ook*.....	41	32.5	38
Sum of *en*.....	96	9	19.5	*ear*.....	40	34.5	37
ay.....	93	10	9	*ell*.....	40	34.5	27
Sum of *oo* (good)...	78	11	18	*op*.....	36	36	34
an.....	76	12	14	*un*.....	34	37	26
Sum of *oo* (moon)..	70	13.5	21	Sum of *ir*.....	31	38.5	47.5
Sum of *ar*.....	70	13.5	11	*ight*.....	31	38.5	35.5
ing (ring).....	69	15	23	*old*.....	28	40	47.5
Sum of *ow* (cow)...	68	16.5	16	*ot*.....	27	41	41.5
Sum of *ow* (show)..	68	16.5	8	Sum of *oa*.....	26	42	33
ill.....	63	18	19.5	*ap*.....	25	43	49
Sum of *at* and *atch*.	62	19	17	*and*.....	24	44	25
Sum of *it*.....	58	20.5	28	*ock*.....	21	45	43
Sum of *in*.....	58	20.5	15	*ail*.....	19	46	50
y (cry).....	53	23	44	*ed*.....	18	47	45
ai.....	53	23	22	*on* (apron).....	15	48	46
Sum of *ai*.....	53	23	10	*ain*.....	7	49	41.5
en (ending).....	52	25	13	*or* (parlor).....	3	50	31

phonograms in which the initial vowel was lengthened by silent final *e*, such as *ate, ike, ese,* It will be noted that *ake* is the only phonogram of this type that has a place in the first fifty phonograms. The sum of all "final *e*'s" would indicate that the rule for lengthening the vowel before final *e* should be taught, but not the phonograms themselves.

"Sum of *ea*," "sum of *ou*," etc., are again cases where the prevalence of these letter combinations makes it important to

teach them, but the lack of any persistent consonant ending makes it undesirable to teach several separate *ea* or *ou* phonograms.

To the ranking of phonograms has been added a rank of initial consonant combinations. These have been taken from the yearbook list only. Consequently rank only is given here, since the book-words are based on a different number of books from the final list. These consonant combinations are, in order of importance, *st, th, sh, gr, br, dr, wh, pl, fl, sp, ch, bl, sw, tr, cr, cl, sl, sn, sm, tw.*

In our own first grade we require a knowledge of the first fifteen of the fifty phonograms, making the next five optional, and a knowledge of the first four of the initial consonant combinations. A knowledge of the short vowel sounds and all single consonant sounds is also required. In order to pass to second-grade reading a child must be able to read at sight material containing new words made up of the required phonograms or capable of being sounded correctly by the use of consonant and short-vowel sounds.

Our basic first-grade phonics list is, therefore, the following: all short vowel sounds; all simple consonant sounds; rule for lengthening vowel before final *e;* the following phonograms and letter groups: *ee, ed* (ending—looked), *ing, er* (ending), *ea* (eat), *an, ou* (our), *en, ay, oo* (good), *oo* (moon), *ar, ow* (cow), *ow* (show), *ill, st, th, sh, gr;* optional, *at, it, in, y* (cry), *ai.*

The devices we use to teach these phonograms would require too much description for this article, but one much used device is a mimeographed booklet with a list of all of the required phonograms and consonant combinations on the first page, followed by a page for each phonogram on which all primer and first-reader words containing this phonogram are listed. Every four pages are followed by a review, with words containing the preceding phonograms mixed together.

As a help to teachers wishing to prepare practice books and other devices, the following words included under the first twenty phonograms are presented:

ee: bee, three, see, oak-tree, apple-tree, trees, hee-haw, wee, tree, bees, free, thee, teeth, To-Whee, seed, cheese, fleece, week, queen, geese, need, feet, sweet, weeds, indeed, nineteen, feeding, green, deer, meeting, seen, street, needed, sweetest, weed, between, feel, greet, feels, needle, steeple, meet, queer, steel, greenhouse, cheeks, sleepy, speed, sheep's, asleep, peep, deep, keep,

steeple, sleep, sheep, keeper, peeped, Bo-Peep, sweep, weep, sweeping, weeping, sleeping, sweeps, sleeps, weeps.

ed (ending): laughed, rolled, knocked, filled, frightened, jumped, leaped, passed, hopped, pecked, worked, smeared, pulled, dragged, picked, chanced, asked, planted, reached, yelled, opened, called, climbed, looked, tossed, burned, popped, whipped, slashed, carried, dressed, soiled, washed, dashed, flashed, roared, walked, stopped, followed, turned, lingered, lived, whispered, liked, baked, snowed, pecked, helped, played, raised, danced, gnawed, barked, milked, pushed, watched, plowed, tired, rained, waved, churned, buzzed, howled, piled, tried, killed, thanked, growled, shocked, changed, teased, cried, sized, stuffed, creaked, gnawed, answered, tied, loved, stooped, dropped, covered, stubbed, frowned, swayed, happened, wakened, clapped, crowed, cared.

ing: falling, choking, spinning, morning, living, getting, going, rolling, doing, playing, holding, coming, scratching, jumping, ringing, singing, crying, sobbing, sighing, building, sun-loving, perching, picking, fluttering, bringing, running, dying, a-fishing, laughing, feeding, dancing, riding, reading, lightning, puffing, blowing, meeting, shining, sitting, blazing, belling, looking, roaring, growling, shouting, hunting, waiting, putting, eating, washing, teaching, gathering, raining, cutting, calling, snowing, growing, flying, tasting, sleeping, beginning, burning, drinking, weeping, sweeping, gosling, walking, saying, making, goslings, shedding, leaving, finding, lying, standing, sliding, hiding, tumbling, having, killing, queer-looking, chopping, baking, crowing, trotting, sting, king, spring, swing, sing, thing, bring, wing, ring, nothing, fling, everything, rings, things, something, brings, anything, king's, wings, strings, silver spring.

er (ending): over, water, butcher, after, under, leather, farmer, spider's, butterfly, dinner, master, sister, whiskers, robbers, together, feather, hatter, fisherman, flowers, power, carpenter, supper, miller, never, winter, father's, caterpillar, brothers, higher, fluttering, other, whither, joiner, barber, fruiter, cobbler, hosier, towers, soldiers, another, teacher, lingered, eager, smaller, bigger, quicker, longer, stronger, wonder, traveler, woodpecker, mother, faster, grasshopper, rooster, baker's, baker, maker, matter, saucer, rather, miner, weaver, wood-cutter, planter, shoemaker, tanner, printer, lumber, river, farmer's, brother, rubber, paper, butter, cover, summer, hammer, ever, sooner, Silverhair, answer, better, whenever, weather, answered, western, others, silver, waters, father, gingerbread, mother's, clover, butterflies, nearer, larger, taller.

ear: ears, near, appear, hear, smear, smeared, nearly, fear, ear, dear, shears, nearer, clear.

ea (*eat*)*:* wheat, eat, beat, please, eager, bleat, reading, real, meal, reached, east, teacher, leaped, meat, sea, speak, leaf, treat, squeaky, heat, leaves, clean, teach, creaks, teaching, eating, weaver, seamstress, mean, leave, stream, cream, leaving, steal, dreaming, bean, each, pea, neat, teased, read, reach, seaside, beans, eaten, means, breathe, beak, dream, dreamland, creak, creaked.

an: pan, an, can, ran, man, fisherman, began, pancake, than, pie-man, woman, another, gentleman, Dan, can't, cannot, Hans, animal, animals,

answer, woodman, elf-man, and, band, stand, hands, landlord, candy, southland, northland, dreamland, standing, sandy, plant, ant, planted, enchanted, pant, branches, chanced, dancing, servant, dance, danced, planter, tanner, branch, elephant.

ou (our): found, snout, out, ground, house, round, mouse, flour, mountains, dormouse, loud, shout, ours, about, proud, without, outside, mouth, our, mouse's, loudly, shouted, cloud, mousie, south, southland, pound, clouds, around, shouting, Tat Mouse's, Tit Mouse, pounded, greenhouse, hours.

en: hen, then, sixpence, quench, Henny Penny, den, went, lend, men, patiently, when, frightened, send, Jenny Wren, mend, gentleman, lent, penny, enchanted, carpenter, fence, end, sent, mended, plenty, Ben, hens, ten, twenty, pen, whenever, bench, bent, bend.

ay: away, good-day, gray, playing, always, dapple-gray, yesterday, play, may, way, pray, hay, haystack, stay, day, played, say, to-day, lay, days, pay, Saturday, saying, swayed.

oo (good): woods, good-day, good, wool, stood, wood, good-bye, woodpecker, woodcutter, foot, good-morning, woodman, wooden, brook, shook, looks, looked, took, crooked, cook, look, looking, book.

oo (moon): Goosey Loosey, soon, too, poor, cock-a-doodle-doo, food, roof, brood, broom, bedroom, rooms, tools, school, moon, rooster, goose, too-hoo, moo, boots, afternoon, room, sooner, spoon, cool, Boo-oo-ooh, foolish, stool, stooped, stoop, Goose Loose, moo-oo, woo-oo, shoot, pool.

ar: farmer, dark, parlor, starve, spark, garden, far, barn, tar, sharpen, large, farmyard, barber, farm, carpenter, started, yard, sharp, bark, barked, party, parties, farmers, arms, hard, part, lark, star, stars, guards, larger, start, jar.

ow (cow): how, cow, plow, down, bow wow, brown, cowslip, town, now, flowers, power, towers, crown, owl, brownie, meow, growly, growl, growling, cows, plowed, howled, growled, bow, brownies, drown, Farmer Brown, frowned.

ow (show): know, throw, meadow, window, snow, crow, show, sparrow, shadow, swallow, grow, blowing, fellow, lowly, followed, bow, grown, blow, crows, snowed, grows, snows, row, yellow, to-morrow, snowing, own, bowls, growing, bowl, low, blows, slow, hollow, crowed, crowing.

ill: hillside, will, kill, Billy, filled, hill, silly, till, still, mill, miller, caterpillar, Jill, killed, fill, bill, half-bill, killing, fills.

at and *atch:* cat, rat, that, fat, at, pussy cat, scratch, scratching, caterpillar, hatter, scratches, sat, catch, matter, hat, cats, Saturday, Tat.

it: little, it, rabbit, bit, visit, sit, spit, hit, mittens, hippity-hop, kittens, kitchen, sitting, kitty, fit, kitten, knit, city, Tit, to-whit, rabbits.

in: gingerbread, into, spinning, chinny, chin, dinner, wind, window, spin, robin, linnet, goblin, winter, skin, lambkins, indeed, prince, coffin, inn, inside, in, thin, print, printer, Dobbin, tinsmith, beginning, winds, begin, windows.

y (cry): my, cry, by, why, fly, sky, butterfly, sly, spy, fry, crying, dying, try, dry, buy, flying, thy, Sly Fox.

ail: tail, fail, tailoress, pail, tailor, nails, sailboat, sails, tails, snail.

ai: waited, afraid, hair, fair, chair, air, laid, milkmaid, raise, waiting, fairy, stairs, Silverhair, hairs, wait.

ain: rain, train, rained, raining, grain.

The second-grade phonics list was prepared from the *Seventeenth Yearbook* list of words occurring fourteen or more times in ten second readers. It was prepared before the basic list of phonograms had been made by the first-grade teachers and was therefore based on a somewhat different criterion.

We defined a phonogram as any letter grouping which occurred in five or more words in the exhaustive analytical list of the *Gordon Teachers' Manual.* We selected all words containing such phonograms in the *Seventeenth Yearbook* word list and arranged them in the descending order of importance by book-words. Since the *Seventeenth Yearbook* list contains only words which occur in *all ten* of the readers analyzed, every word listed counts as ten book-words. Our phonic list, therefore, resolved itself into a list of phonograms in the descending order of the number of listed words containing them.

From the list we eliminated all that are taught in the first grade. From the remaining list we used all that occurred in five or more words. We then added those phonograms which were not in either of our lists but which occur in seven or more words of Thorndike's first thousand words, since sooner or later the children will surely meet these words. This yielded the following list of second-grade phonograms and consonant combinations: all consonant sounds, final *y* (country), *and, all, ent, ide, in, un, br, cl, dr, sp, wh.*

As a check on the reliability of both the first-grade list and the second-grade list, we applied to the first-grade yearbook list the same criterion as was used in the second grade. It was shown that of the first twenty-five phonograms found by the first-grade method twenty-one occurred among the first twenty-five phonograms found by the second-grade method.

The lists as given, therefore, have proved their validity by a double check—the check of one set of first readers against another and the check of one method of selecting the most important words against another. Both checks show such substantial agreement that we can consider our lists as basic lists of phonograms to be taught in the first and second grades.

A FEW SUGGESTIONS FOR INFORMAL TESTING IN GEOGRAPHY

EDITH P. PARKER
University of Chicago

Much worth-while testing in geography can be done at the play level in ways which children thoroughly enjoy. The following incidents suggest some of these ways.

Near the end of their year's work, the children in one fourth-grade class had sensed the principle that the distance of a man's home from the Equator influences his activities. Since in their imaginary travels they had not seen any of the tropical islands, a "visit" to the East Indies afforded a chance for them to be tested for the ability to apply this principle. On the bulletin board was put a group of uncaptioned numbered pictures, some of which had been taken in the East Indies, and others of which had been taken in relatively high latitudes. After finding the East Indies on their maps, the children were asked to write down the numbers of all of the pictures on the bulletin board that they thought might have been taken in the East Indies. Though this was a pleasurable task, it showed whether the children who performed it recognized as tropical the vegetation shown in some of the pictures and whether they associated such vegetation with nearness to the Equator.

During their study of the East Indies, one boy asked the teacher, at the beginning of the geography class, "Have you ever heard of a book called *Longman's School Atlas?*" "Yes. Have you one?" "There is one at my house. Well, did you ever notice in that book a map called the *distri—*, *distri—*, something of population?" "Yes, the distribution of population. Why?" "Well, I found out something very interesting about Java from that map. It has a lot more people on it than any of the other islands. I wondered why." This child's problem did not excite the interest of the rest of the class, but the fact that he could tell from a map that Java had more people than Sumatra did interest them. The children

had learned to read many things from a map but had not used a population map. They began to ply him with questions as to how he did it and asked him to bring his map to show them. He explained how the key told him that the colors did not mean the same things they meant on the wall maps. This was an excellent test of his ability to tell how to read this map. It is also interesting to note that in this case the child's inability to pronounce and use the word "distribution" made it clear that he interpreted the map symbols in spite of the fact that he did not understand the written statement of the things symbolized. Too often children merely read the labels of symbols instead of interpreting the symbols themselves. From that time on, scarcely a lesson passed without interruption from some child who wished to tell some fact, in many instances irrelevant to the discussion in hand, that he had discovered the night before from some map. Finally, to avoid too much interruption the teacher suggested that, instead of talking a little each day about the new facts they found from their maps, they save all of their information until Friday when they might have an atlas "party." To this they might bring any atlas they could, or any maps they wished, and they might tell all they wanted to about how they had used their maps and what they had found. If, after they had done this, there was still time, they could play some atlas games.

As the children who brought atlases showed them and talked about them, the class tried to decide which atlas they liked best, and later they voted to see which was the most popular. The puzzle games were conducted as follows: The titles and legends of world-maps in atlases that had not been seen previously by the class were covered so that there was no clue to the meaning of the colors except their distribution. The map of annual average temperatures, colored in different shades of the same hue, was shown, and the children were asked to decide, from what they knew of the world, what those colors might mean. Five out of thirty of them could think of nothing. A characteristic reply of the others was, "The colors must show where there is lots of heat and where there isn't, because in reading about Colonel's journey we found that he got warmer as he went toward the Equator and colder as he went away

from it." It seemed clear that emphasis on the details of temperature change in the story of this voyage had effectually taught the geographic principle that annual average temperatures tend to decrease from the Equator poleward.

The children then examined a color-contour map of the world. Every member of the class guessed that the colors showed highlands and lowlands, although the colors used were not those that they had seen on other relief maps. When asked if they could prove it, they said promptly, "Yes. Look at the Alps." There were no names on the map, but they had recognized the Alps by their location.

A vegetation map was shown next, and nineteen out of thirty had some idea as to what the colors meant. Of the nineteen, five thought the dark green near the Equator must mean heavy rainfall, and fourteen thought that it must mean tropical forests, "because there were tropical forests and much rain in the homeland of the negroes we visited in Central Africa." Before they tried to decide what any other colors on this map meant, the rainfall and vegetation maps were shown together, and they were told that one map showed rainfall and the other plants. They were to decide which showed one, which the other. They discussed the spot which meant to them Machla's home, the Sahara, but it helped them very little, for it was much alike on the two maps. It might mean either little rain or few plants. It was finally noticed by two of the children that on one map there were many different colors while on the other there were different shades of the same color. This led them to make the right decision. They could not tell what all of the colors on the vegetation map meant but said, "After we've finished the game, can we find out what the colors we don't know about mean?"

At first glance, more than one half of the class recognized the density of population map and, when pressed for proof, said, "Look at Java." Then one of them said, "People are thick almost all over Europe, aren't they? That's funny."

The test was conducted in the nature of a game, and the children wanted to play it again the next day. At that time, some of the maps in Finch and Baker's *Geography of World Agriculture* were

used in the same way that the other atlas maps had been used. The children were told, for example, that the map of Europe at which they were looking showed where one kind of animal was reared. "Goats," they promptly decided, "because the place we visited where we saw the most goats is the Balkan Peninsula, and this map is blackest there." They didn't know whether the olive map showed olives or oranges but said that the dots could not represent wheat or grapes because they had seen them in other places not so near the Mediterranean. All in all, the reaction of the children to this test was a surprising demonstration of the accurate thinking which even very young children can do when they have vivid imagery on which to base their thinking, and when they face a situation provocative of thought. This test emphatically is not recommended as a part of regular fourth-grade work. It is cited merely to suggest one kind of "play" tests with maps.

Exercises such as the following tested still farther the children's ability to reason as well as their knowledge of some geographic facts and principles: (1) A description of a journey in which no place names were mentioned was read to the children and they decided whether it was an east-west or a north-south journey. (2) The description of a tropical scene was read, and the children named all of the places they thought it might fit, e.g., Northern Australia, Southern North America. (3) This paragraph was read from the geography of a little girl who lived in a foreign land:

> Midday is halfway between sunrise and sunset. It is the middle of the day. Where the sun is at midday we call the North. You have seen how the sun's shadow is always along the same line on the dial at midday. That is because the sun's rays are always in the same direction at midday. He is always in the north. Therefore, we can always tell where the north is. If we face the sun at midday, we face the north. Our shadow points to the quarter directly opposite to the north, the south. While we face the sun, on our right hand is the east, and on our left hand is the west.[1]

The children were then asked, "In what places might the little girl live?"

Thus, pictures, maps, and reading references that are new to the children can be used in such a way as to test on the play level for a knowledge of geographic principles.

[1] Evelyn Oswald, *A Geography for the Transvaal*, Book I, p. 17. London: Longmans, Green & Co., 1916.

PHONICS AND NO PHONICS[1]

LILLIAN BEATRICE CURRIER
Franklin, New Hampshire

In December, 1916, the *Elementary School Journal* published an article entitled "Phonics or No Phonics?"[2] This was the report of experiments conducted in the second grade of the public schools of Tilton, New Hampshire, to aid in determining the value of phonetic drills in teaching reading. At that time the following observations were made:

1. Phonetically trained classes read generally with less speed, less interest, greater fatigue, and with confusion of ideas.

2. Classes not having phonetic drills read with greater interest, increased speed, and more expression. They were careless in pronunciation and employed more or less word substitution. Fatigue was much reduced, and story reproduction was very successful.

3. Foreign children, children with impediments of speech, and children who had previously formed bad habits of pronunciation were much helped by phonetic drills.

4. Expressionless, hesitant, or habitually slow readers were greatly helped by quick perception and sense-content methods.

5. There was little difference between the average ability of those having phonetic training and those not having it when attacking sight work.

Experiments and observations along this line have been continued in the fourth and fifth grades, a report of which may prove of interest and of help to those engaged in teaching primary reading.

The year following the publication of the article "Phonics or No Phonics?" the same experiment was again tried, the grade

[1] Report of experiments conducted in the public schools of Tilton, New Hampshire, under the supervision of Superintendent C. A. Breck, and in the Franklin, New Hampshire, schools under the supervision of Superintendent G. A. Keith.

[2] Lillian Beatrice Currier and Olive C. Duguid, "Phonics or No Phonics?" *Elementary School Journal*, XVII (December, 1916), 286–87.

(III B) being divided into two classes at the beginning of the year. One class was given thorough phonetic training and the other no such training. In June, when the two classes were given the same sight reading, their average ability was about the same, and observations similar to those of the preceding year were made. One additional conclusion was recorded; for at least one-fourth of the entire grade phonetic drills were an absolute waste of time. A certain number of pupils evidently possess a natural "phonic sense" and employ it and unconsciously depend on it from the very beginning of their reading. To these pupils phonic drills as a part of the daily routine proved very tiresome, wholly without value. Given occasionally as rest period games, they were received with enthusiastic interest.

The ensuing year brought a very large number of children into Grades III A and III B. One-fourth of the children were exceptionally bright; an equal number were decidedly dull and backward, and the remainder, as is usual when groups of such extreme ability must be together, were dull, listless, careless, and uninterested. This time the class was divided into groups according to their ability.

In the case of the bright group daily "pronunciation games," so named, were substituted for the regular phonic drills. These were made up of words selected from the dictionary. They were phonetically unrelated, dissimilar in a visual sense, and no attempt was made to choose words with which the children were in any way familiar. These words were never explained as to meaning except in the case of a child asking for such explanation. In this case the specified word was always as clearly defined as to meaning and use as was possible. The whole point of these word games was pronunciation. This form of phonic drill, if such it might be called, proved of inestimable value, and its use has been continued ever since. This work has always been eagerly received by the children, and through its use they have developed to a greater degree their "natural phonic sense" besides gaining a nicety of diction, an increased vocabulary, and greater mastery of and confidence in attacking unfamiliar words in both sight and silent reading. It has been a personal belief that the greater amount of silent reading

accomplished and its proven increase of value to the pupils were directly attributable to these drills.

The second group was made up of careless, heedless, inattentive readers. They read with little expression. To them a story was a mere jumble of words. They displayed either an absolute indifference to or an intense dislike for all reading. These children were given very intensive training in phonics. Strict attention was demanded at all times from every member of the group. The drills were never allowed to be of fatiguing length, and much time and thought were devoted to making them varied and attention-commanding, that the pupils should willingly give their undivided interest.

As with the first group, the unfamiliar word pronouncing games were employed, but the words selected were less difficult. Regular reading periods were abandoned for some weeks, and a story hour substituted, the teacher telling the stories. In choosing stories for presentation diligent search was made for "something new" to the pupils. Then the story was developed from a dramatic standpoint, and parts were chosen. Often very simple costumes were brought from home, and the story played, much to the enjoyment of the actors. At last the children began to ask to be allowed to borrow the book containing the stories, and from then on silent reading was most popular. Regular reading periods were resumed. There was no longer inattention or dislike for the reading period; in fact, "Please may we read just five minutes longer?" was a frequent question. The intensive phonic training had cured carelessness absolutely in almost every case, and in the one or two exceptions it had been so reduced that in a little time it was completely overcome. The daily drill in pronouncing unfamiliar words brought new confidence and mastery as in the other cases. Dramatizations had resulted in expressive reading and awakened interest. By using phonics as a remedy and keeping a growing desire for stories themselves as an aim, the problem had been solved.

The third group presented an entirely different case. Some of the children had only recently arrived from foreign countries; some had non-English-speaking parents; several were from private institutions where instruction had evidently been of second-rate

quality; many were from families who moved so frequently from place to place that no school had had an opportunity to accomplish anything for them. They were in almost every case beyond the grade age but had previously become retarded and finally discouraged and submerged. Most of them enjoyed as keenly as any of the other children a story told or read to them. Technically, they were absolutely deficient. They possessed appreciation on an average with the others, and they possessed latent mental possibilities.

It was decided to try out the theory of "learning to read by reading," but where was to be found material which would make the slightest appeal to these children? Anything simple enough to be read by this group would possess no interest for them but would lead to great discouragement and ultimately destroy all possibility of progress. The only solution seemed to be to adapt to their needs the stories which had proved to be favorites with the other classes. These simplified stories were written on the blackboard and developed by story-telling and sense-content methods. After the interest of these pupils was awakened and they had begun to gain self-confidence, phonic and word drills were used, and their progress was much more encouraging. In June these people could read third-grade books with thorough appreciation and enjoyment. Faults of pronunciation still existed, but the children were no longer discouraged or submerged, and they looked forward to each new story and new book.

One group, Grade IV, thirty-five in number, all having unusual ability, was closely observed. They were correct, rapid, expressive readers and were found to have highly developed phonic sense. In spelling and written dictation they were correct and rapid. Because of their reading proficiency they were able to do a great amount of geography, history, and other silent reading. In music they were rapid and correct sight readers. On tracing their previous school records it was found that from the very first they had possessed a very acute phonic sense. The usual training in phonics had seemed a waste of time and had very soon been practically abandoned. In addition, it was shown that the personnel of the class was little changed from the registration in the first grade.

The percentage of attendance had from the very first been high. All of this was added to unusual natural ability. Perhaps their progress would have been the same under any method; perhaps it was in spite of, rather than because of, the instruction.

The following conclusions are based on the observations made during the experimentation of the past five years:

1. Phonetics drills have a very real value but are not essential to every child as a part of the daily program in primary grades.

2. Phonetic drills should at all times be employed with discretion and adapted to the needs of the individual child or special group.

3. Word-pronunciation drills have proved to be of much value. They may be only a very good device.

4. Much careless oral reading and failure to get the idea from the printed page come from poorly or carelessly supervised silent reading. The teacher should insist that all silent reading be done conscientiously and then be accounted for. Silent reading should at all times be carefully guided and the child held responsible for it. There are many ways of getting the child's account of this reading—reproduction through handwork illustrations; verbal reproduction during story hour, through dramatization and by means of the sand-table; sometimes written reproduction. The root of many reading evils lies in permitting haphazard, uncontrolled, unsystematic silent reading.

5. The thing of greatest importance is to arouse, hold, strengthen, and develop the interest of pupils. Lead the pupils to crave reading and, having established this desire, supply them with sufficient quantities of the very best material available. Choose silent-reading material with utmost care, bearing in mind the varied tastes of the pupils.

6. Do not use one system for every case. What is food for one may be poison for another. Cull the truth from many systems. Study the needs of the different pupils and then experiment to find the best method for the particular problem encountered.

THE VALIDITY OF ARITHMETICAL-REASONING TESTS

R. V. HUNKINS
Superintendent of Schools, Lead, South Dakota

F. S. BREED
University of Chicago

The primary purpose of the experiment reported in this article was to throw some light on the relative validity of several arithmetical-reasoning tests that are in use at the present time. The several tests were administered to a group of pupils in accordance with a plan devised to control the factors which might prove advantageous or disadvantageous to any test. An index of relative validity was computed and the tests ranked in accordance therewith.

A secondary purpose of the experiment was to ascertain, if possible, the causes of the different degrees of merit shown by the different tests. This was attempted through an analysis of the method and content of the tests. The analysis revealed so many variables, however, that the secondary purpose of the experiment resulted in suggestions for further investigation rather than in definite conclusions.

The following tests were used in the experiment: (1) Daniel Starch, Arithmetical Scale A; (2) C. W. Stone, Reasoning Test; (3) W. S. Monroe, Standardized Reasoning Test in Arithmetic, Form 1; (4) B. R. Buckingham, Scale for Problems in Arithmetic, Form 1; (5) E. H. Chapple, S. A. Courtis, and F. R. Matthews, Arithmetic Tests—Reasoning; (6) R. M. Yerkes, M. E. Haggerty, L. M. Terman, E. L. Thorndike, and G. M. Whipple, National Intelligence Tests, Scale A, Form 1, Test 1; (7) M. E. Haggerty, Intelligence Examination, Delta 2, Exercise 2; (8) A. S. Otis, Group Intelligence Scale, Advanced Examination, Form B, Test 5; (9) L. M. Terman, Group Test of Mental Ability, Form A, Test 5; (10) A. S. Otis, Group Intelligence Scale, Advanced Examination, Form B (complete).

Since no standardization for the Chapple-Courtis-Matthews test had been effected at the time of making this report, the results

from it are omitted. Results from the Terman test are also omitted because it was adapted to only two of the four grades used in the experiment. The Otis Group Intelligence Scale was used to obtain a measure of the general intelligence of the subjects. Its arithmetical-reasoning component was treated in the same manner as the similar components of the other intelligence tests.

The subjects to whom the tests were given were pupils in Grades V to VIII, inclusive, of a public school in Hot Springs, South Dakota. After the elimination of eight pupils, who for various reasons missed one or more tests, there were 127 pupils without an absence in any test. These pupils were distributed as follows: thirty-four in the fifth grade, forty in the sixth grade, thirty-one in the seventh grade, and twenty-two in the eighth grade.

The data regarding the subjects showed (1) that all of the grades except the eighth ranked on the average somewhat above the norms for all of the arithmetical-reasoning tests and also for the Otis Group Intelligence Scale (complete), (2) that the eighth grade ranked slightly below the same norms, and (3) that there was a satisfactory correspondence of quartile deviations on the Monroe arithmetic test and the Otis intelligence test with the appropriate norms.

In general, the data indicated that there was nothing in the nature of inferiority, superiority, or unusual variability of the subjects to affect unfavorably the final results of the experiment. Furthermore, the subjects were not characterized by the presence of any particular industrial, social, or nationality group.

Table I shows the plan of administering the tests. It is believed that this plan provided an adequate set of controls for any advantages or disadvantages that might have come to any of the tests by virtue of their position in the scheme of administration. It should be noted that all of the tests were given in four morning periods on eight different days. Careful examination of the table will show that the chances for advantage of one test over another that might have accrued from any of the following sources were equalized: (*a*) time of day, (*b*) day of the week, and (*c*) order of administration.

All of the tests were administered by Mr. Hunkins in strict accordance with the directions accompanying them. Teachers and

pupils were not informed beforehand as to the plan of testing. Precautions were taken to prevent communication of information about the tests from one grade to another. The pupils were accustomed to standardized tests and manifested no unusual concern about them. The attention and industry were good throughout.

All of the tests were carefully scored by Mr. Hunkins in rigid compliance with the directions for scoring. In each of several cases of doubt with regard to the method of scoring, the judgment of the author of the test was secured by correspondence.

TABLE I

PLAN OF ADMINISTERING THE TESTS

DAY	PERIOD			
	1	2	3	4
	Grade V	Grade VI	Grade VII	Grade VIII
Wednesday	Otis (complete)	Haggerty	Starch	National and Terman
Thursday	Starch	National	Otis (complete)	Haggerty
Monday	Chapple-Courtis-Matthews	Monroe	Buckingham	Stone
Tuesday	Monroe	Buckingham	Stone	Chapple-Courtis-Matthews
Wednesday	Buckingham	Stone	Chapple-Courtis-Matthews	Monroe
Thursday	Stone	Chapple-Courtis-Matthews	Monroe	Buckingham
Monday	National	Otis (complete)	Haggerty and Terman	Starch
Tuesday	Haggerty	Starch	National	Otis (complete)

The derivation of a composite score.—In measuring the length of a physical object, the average of several competent attempts is found to be more reliable than single attempts; that is, the average measure has a much smaller probable error than the single measures. Each test employed in the experiment provides a single measure of the arithmetical-reasoning ability of each pupil. The average score of a pupil in several tests may be regarded as approximating more closely the true measure of the ability in question than the

measurement derived from a single test. Accordingly, five of the tests, which used one set of problems for all four grades, viz., Stone, Starch, Otis, Haggerty, and the National, were employed in deriving a set of average scores for the 127 pupils. This average score will be referred to as the composite score.

The scores obtained from the original marking of the papers were not in comparable units. It was therefore necessary to reduce the original scores of the five tests mentioned to a common denomination, in other words, to values on a common scale. The scores on the various scales were accordingly percentilized.

In computing the percentile scores, a normal distribution was assumed for the 127 scores in each test. The fact that the pupils represented different grades was disregarded. This method was used in order to increase not only the facility of computation but also the reliability. When the distributions were plotted, the histogram for the 127 scores more closely resembled a normal distribution than the histogram for any single grade. Figure 1 illustrates the statement just made for the Stone test. With the possible exception of the histogram for the fifth grade, the one for all grades is the most symmetrical. The results for the Stone test in this respect are representative.

An illustration from one test will explain how the percentile scores were derived. The original scores for the 127 pupils were arranged in ascending order from the lowest score to the highest. They were then ranked from 1 to 127. Where two or more pupils made the same test score, the average rank of these pupils was given to each. For example, a group of five having equal scores spreading over the ranks 28, 29, 30, 31, and 32 were all given a rank of 30. With an even number the arithmetic mean of the two middle ranks was used.

The rank index for each pupil was multiplied by .787, the percentage equivalent of 1 over 127. This percentage equivalent indicates for any pupil the percentage of pupils who received a lower score. If abilities were distributed in rectangular form, these percentage equivalents would be the percentile scores. But since abilities are distributed approximately in accordance with the normal curve, these percentage indices must be transmuted into corresponding values on the horizontal axis of the curve, that is,

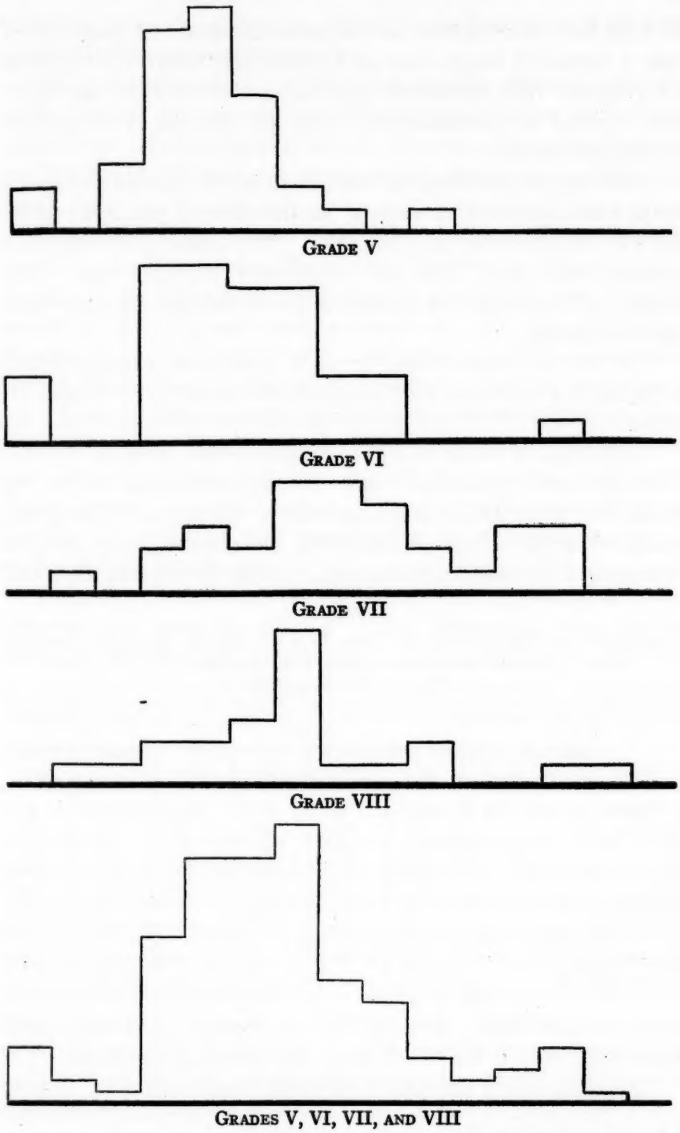

FIG. 1.—Histograms for the distribution of scores in the Stone Reasoning Test

the base line which is used as the percentile scale. A base line or scale 5 sigmas in length was used, extending from -2.5 sigma to $+2.5$ sigma. The percentage equivalents derived from the ranks were reduced to percentile-scale units by the use of a table of probability-values.[1]

After the percentile scores were obtained, the correlation coefficients were computed for each of the five derived percentile series and the corresponding original series. The lowest coefficient thus obtained was .977. The five coefficients averaged .987. The validity of the method of transmutation is demonstrated by these high coefficients.

The five percentile scores for each pupil were averaged, thus providing 127 scores known throughout the report as the composite scores.

Comparison of results of different tests with the composite.—If the composite score represents a fairly close approximation to the true measure of arithmetical-reasoning ability, the degree to which the results of any given test correlate with the composite may serve as a measure of the validity of that test. Table II contains the coefficients of correlation, obtained by the Pearson product-moment method, for each of the seven tests with the composite score. The

TABLE II

COEFFICIENTS OF CORRELATION FOR EACH TEST BY GRADES WITH THE COMPOSITE SCORE, TOGETHER WITH COEFFICIENTS FOR CHRONOLOGICAL AGE AND GENERAL INTELLIGENCE

TEST	GRADE				MEAN	RANK
	V	VI	VII	VIII		
National	.84	.84	.70	.70	.77	5
Haggerty	.88	.82	.82	.90	.86	2
Otis	.81	.90	.76	.85	.83	3
Starch	.80	.71	.83	.84	.80	4
Stone	.87	.90	.87	.89	.88	1
Monroe	.83	.71	.55	.49	.65	6
Buckingham	.55	.62	.49	.47	.53	7
Otis (complete)	.61	.62	.70	.71	.66	.....
Chronological age	$-.23$	$-.35$	$-.26$	$-.11$	$-.24$	.....

[1] For a more detailed description of the method of transmutation see the article by F. S. Breed and E. R. Breslich entitled "Intelligence Tests and the Classification of Pupils," *School Review*, XXX (March, 1922), 210–26.

table also gives the correlation for chronological age and the Otis Group Intelligence Scale (complete).

Except in the case of the National and the Monroe tests, the coefficients for the same test for different grades show satisfactory uniformity. No explanation for the relatively low correlation for the National test with the composite in the seventh grade was found.

Considerably the highest correlation for the Monroe test is shown in the fifth grade. It happens that the problems for the division of the test used in the fifth grade are the only ones that are general in character and compare favorably with the problems in the other tests; that is, problems in the other two divisions deal with special phases of arithmetic, such as fractions, decimals, or percentage. Such problems involve the use of special technique to a considerable extent. For the sixth grade this special technique for most of the problems had been studied the year before; for the seventh grade, two years before. The presence of variability in retention of technique may account for the discrepancies in the results for the Monroe test.

According to closeness of agreement with the composite, the different tests rank as follows: Stone, Haggerty, Otis, Starch, National, Monroe, and Buckingham. The reliability of the rank for a single grade is diminished by the smallness of the numbers of pupils represented in a grade. Therefore no special significance is attached in this report to the ranking for separate grades.

Incidentally, it may be noted that the coefficients for correlation of the composite score with chronological age are all negative and decrease in size from the sixth to the eighth grade. The coefficients for general intelligence as represented by the scores on the Otis Group Intelligence Scale are all positive and increase from the fifth to the eighth grade. The only apparent condition that might operate to produce this situation is the elimination of the older and duller pupils in the upper grades. Data not included in the report showed the occurrence of such elimination. Such an explanation would suggest that there is not so close a relation between arithmetical reasoning and general intelligence in inferior pupils as in pupils of higher intelligence rating.

Inter-test correlations in the sixth and seventh grades.—With a view to verifying the evidence revealed through the use of the composite scores, all of the possible inter-test correlation coefficients were computed for the sixth and seventh grades. The method of composite scores showed which test agreed most closely with the average result of five of the tests. The method of inter-test correlation will show which test on the average agreed most closely with the rest of the tests. The results by the two methods should be closely similar. Table III shows the coefficients obtained. It is at once evident that these coefficients average much smaller and are much more variable than those for the composite score. The chances for the results of a given test to vary from the average of several of them are fewer than the chances for the results of one test to vary from those of another.

The "Mean" column of Table III shows the arithmetic mean for the six coefficients of correlation of each test with every other

TABLE III

INTER-TEST CORRELATIONS FOR THE SIXTH AND SEVENTH GRADES

Test	Grade	National	Haggerty	Otis	Starch	Stone	Monroe	Buckingham	Mean	Gen. Aver.	Rank
National	VI	.....	.59	.65	.56	.66	.61	.54	.60	.50	4
	VII	.....	.44	.46	.38	.33	.58	.17	.39		
Haggerty	VI	.59	.....	.74	.30	.72	.55	.44	.56	.55	3
	VII	.44	.....	.47	.50	.70	.52	.54	.53		
Otis	VI	.65	.74	.....	.49	.78	.64	.59	.65	.56	2
	VII	.46	.47	.....	.55	.64	.16	.50	.46		
Starch	VI	.56	.30	.49	.....	.59	.52	.52	.50	.47	6.5
	VII	.38	.50	.55	.....	.65	.18	.31	.43		
Stone	VI	.66	.72	.78	.59	.....	.56	.59	.65	.60	1
	VII	.33	.70	.64	.65	.....	.43	.54	.55		
Monroe	VI	.61	.55	.64	.52	.56	.....	.58	.58	.48	5
	VII	.58	.52	.16	.18	.43	.....	.35	.37		
Buckingham	VI	.54	.44	.59	.52	.59	.58	.....	.54	.47	6.5
	VII	.17	.54	.50	.31	.53	.35	.....	.40		
Composite	VI	.84	.82	.90	.71	.90	.71	.62	.79	.75	.....
	VII	.60	.82	.76	.83	.87	.55	.49	.70		

test in a given grade. The "General Average" column shows the arithmetic mean of the two average coefficients for each test. The last column of the table shows the rank of the tests according to the magnitude of the averages in the preceding column. These

ranks indicate the validity of the tests as measured by inter-test correlations in the sixth and seventh grades.

Table IV presents the ranking of the tests according to the two different methods of estimating their validity. It should be remembered that in determining the composite score only five of the tests were used, the Monroe and the Buckingham being omitted.

TABLE IV

RANKING OF THE TESTS

Test	Method of Composite Scores	Method of Inter-test Correlation	Combined Ranks	Final Rank
National	5	4	9	4
Haggerty	2	3	5	2.5
Otis	3	2	5	2.5
Starch	4	6.5	10.5	5
Stone	1	1	2	1
Monroe	6	5	11	6
Buckingham	7	6.5	13.5	7

In determining the inter-test correlations, all of the tests were used. It will be noted that the results by the two methods differ but slightly. It is important, however, to consider the inter-test values side by side with the other series, primarily because of the omission of two tests in the computation of the composite. Inclusion of a test in deriving the composite naturally tends to improve the rating of the test by the composite.

The two series of ranks appearing in Table IV were combined to form a final series representing the net result of this investigation. This final series is shown in the column designated "Final Rank." It will be seen that the Stone test maintains its position in first place and that the Haggerty and Otis tests divide honors for second place.

It might be urged, in criticism of the foregoing conclusion, that the fundamental assumption on which it is based is of questionable validity, that the average of a number of expert attempts at measurement is not a reliable criterion, and that the majority of the test-makers may be in error. That the majority may be in error is very true. It would seem, however, that the burden of proof rests on the deviates rather than on the conformists. It is constantly

assumed, other things being equal, that two good general intelligence tests yield a result more reliable than one and that the results from two good measurements of handwriting quality are more dependable than the results from one. The principle thus accepted is the same as that on which the present study is based. The results from the several reasoning tests have simply been compared with their average result, a criterion that is probably nearer the true result than the measures from any single test. Until better evidence is obtained with regard to the comparative validity of the tests studied, it is the contention of the writers that the Stone test can be more safely used for the purpose of measuring arithmetical-reasoning ability than any of the tests with which it was compared.

A satisfactory analysis of the tests would discriminate the elements determining the place that a test assumes in the scale of relative validity. Such an analysis should prove of service in the evaluation and construction of tests of arithmetical reasoning. As was intimated at the outset, no such analysis was accomplished in the present study. Satisfactory analysis, including a determination of the influence of the numerous contributing factors, will require many additional investigations. A brief and superficial analysis may, however, be of some value. It may serve to point out the directions which further investigation might take in order that a foundation may be established for the construction of improved tests.

The tests used in this experiment are divided into two groups according to the purpose for which they were designed. The components of the intelligence tests were designed to measure an element in general intelligence. The regular arithmetic tests were designed to measure an aspect of arithmetical ability in the classroom. In other words, in the one case the purpose of construction was in a sense psychological; in the other, pedagogical. The former tests consist of short and for the most part relatively easy problems which are to be solved under the pressure of a time limit; the latter involve longer problems, and the time is either liberal or unlimited. This difference in purpose is attended by certain real differences in the tests. Ability to solve an arithmetic problem when the statement is simple and clear, the content familiar, and the necessary pro-

cesses untechnical, probably depends almost entirely on arithmetical-reasoning ability. Ability to solve an arithmetic problem when the vocabulary employed is difficult and the computational processes are technical depends on something more than arithmetical-reasoning ability. It would seem that knowledge of terms (vocabulary), understanding of problems (comprehension of sentences and paragraphs), and ability to use technical processes (computational skill) should be measured by different tests.

The fact that not all of the tests studied are called arithmetical-reasoning tests by their authors has been ignored. Starch terms his test an "arithmetical scale." Stone calls his a "reasoning test." Fifty per cent of the problems in the two tests are identical. Monroe designates his test a "reasoning test in arithmetic." In this test the problems were selected from arithmetics and contain such technical terms as are common to arithmetics. There seems to be at the present time no adequate ground for distinguishing between arithmetical-reasoning tests and tests of ability to solve problems in arithmetic.

While the difference just pointed out probably tends to make the psychological type of test a superior instrument for the purpose of *measurement*, it does not tend to make it superior for the purpose of *diagnosis*. The shorter tests represented by the components of the intelligence scales are not serviceable for diagnosis. Two tests of this type were found to have a high degree of validity, according to the results of this experiment, but neither one can be used successfully to ascertain the particular difficulties of individual pupils. On the other hand, such tests as the Stone and the Monroe locate many such difficulties and thus provide a basis for instituting remedial instruction.

It would seem from the results of this investigation that tests similar to the components of the intelligence tests should be developed for the purpose of measuring quickly, easily, and reliably the arithmetical reasoning in a class, school, or school system. Such tests would be especially valuable to the school administrator. For the use of the supervising principal and teacher who are more interested in learning the causes of unsatisfactory scores, the diagnostic test should be developed.

From this distinction between the psychological and pedagogical types of test, we shall now turn to a more detailed analysis of the tests. Table V presents the obvious similarities and differences

TABLE V

OBVIOUS SIMILARITIES AND DIFFERENCES AMONG THE TESTS

Test	Time in Minutes	Divisions	Place for Computation	Method of Scoring	Weighting	Preliminary Work	Kind of Problems
Stone.....	15	None	Scratch paper	Right steps	Yes	Test in fundamentals	Like "written" problems, medium difficulty
Haggerty...	5	None	Margins	Right answer	No	None	Like "oral" problems
Otis.....	6	None	Margins	Right answer	No	None	Like "oral" problems
Starch.....	Unlimited	None	Back of sheet	Right answer	Yes	None	Very similar to the Stone, 50 per cent identical
National...	5	None	Margins	Right answer	No	Sample problems	Like "oral" problems
Monroe....	25	Grades IV and V Grades VI and VII Grade VIII	Space near problem	Right principle	Yes	None	Selected from standard texts
Buckingham	60	Grades III and IV Grades V and VI Grades VII and VIII	Space near problem	Right answer	Yes	None	Like "written" problems. Difficult

among them. Space will permit but a brief discussion of the characteristics of the tests represented in this table. The Stone test, which ranks highest in validity according to the results of this study, assumes median place with respect to time allowance, as indicated in the second column, The tests of lowest rating have the greatest time allowances. On account of the numerous other variables entering into the situation, the relation between time allowance and test validity must remain undetermined, so far as this report is concerned.

The Stone test differs from all of the others in the matter of the place for the written computation of the pupil. The problems are solved on the kind of paper which each subject has been accustomed to use for this kind of work. The Monroe test provides small spaces near the problems for the computation and requires all work to be given. In the case of this test, 17 per cent of the subjects lacked sufficient space for one or more problems. There was con-

siderable confusion among the pupils in the Starch test, where the problems are worked on the reverse side of the test sheet. The difficulty arose from the necessity of referring repeatedly to the front of the sheet for the statement of the problem.

The Stone test differs from all of the others, also, in the method of scoring. This test allots credit for correct steps, even in partially correct solutions of problems. The various steps in a problem are given equal value and the problems weighted credit. The right-principle method of scoring gives credit for some problems, of course, that the right-answer method eliminates. The method of giving partial credit for problems not wholly right in principle goes a step farther in taking account of all of the reasoning that the pupil does in the test. The results of the experiment reveal nothing with regard to the relative efficacy of these methods. This whole matter of methods of scoring tests needs careful quantitative investigation.

Only two of the tests, the Stone and the National, provide for a preliminary exercise. Nothing can be said in regard to the value of these preliminary exercises, in the light of the results.

The classification of the problems shown in the last column of Table V is quite arbitrary and necessarily superficial. The only test using scientifically selected problems, at least from the point of view of arithmetic, is the Monroe. This test did not make a relatively good showing. The nature of the problems in the Monroe test was touched upon in an earlier part of this report. The problems of the Buckingham test proved to be too difficult for the subjects. Eleven per cent of the subjects made zero scores. This accords with Monroe's findings regarding this test for a larger number of pupils. His results for 24,970 pupils on the Buckingham test in the same grades show that 9 per cent made zero scores.[1]

SUMMARY AND CONCLUSIONS

According to the results of this investigation, the following conclusions seem justified:

1. The Stone Reasoning Test is the most valid of the seven tests of arithmetical reasoning studied.

[1] Walter S. Monroe, *Report of Division of Educational Tests for 1919–20*, p. 15. University of Illinois Bulletin, Vol. XVIII, No. 21; Bureau of Educational Research Bulletin, No. 5. Urbana, Illinois: University of Illinois.

2. The results of this experiment confirm previous findings to the effect that the Buckingham Scale for Problems in Arithmetic, in its present form, is unsatisfactory.

3. The combined results of two methods of determining the validity of measurement of arithmetical-reasoning ability give the tests the following rank, in the order of diminishing validity from first to last: (*a*) Stone Reasoning Test; (*b*) and (*c*) Haggerty Intelligence Examination, Delta 2, Exercise 2; Otis Group Intelligence Scale, Advanced Examination, Form B, Test 5; (*d*) National Intelligence Tests, Scale A, Form 1, Test 1; (*e*) Starch Arithmetical Scale A; (*f*) Monroe Standardized Reasoning Test in Arithmetic, Form 1; (*g*) Buckingham Scale for Problems in Arithmetic, Form 1.

4. The arithmetical-reasoning components of the three general intelligence tests rank high. They have little value for diagnostic purposes, but they are brief, easy to administer, and can be quickly and accurately scored. These facts suggest the possibility of the development of a brief test similar to these intelligence test components for the economical measurement of arithmetical-reasoning ability, a test that would be especially serviceable to school administrators and surveyors.

5. The Monroe and the Stone tests are the only tests of the seven that provide for systematic solution of the problems. They are, therefore, the most useful tests for the diagnosis of individual difficulties.

6. Analysis of the method and content of the tests revealed marked variations with respect to the following points: (*a*) length of time allowance, (*b*) differentiation of problems for different grades, (*c*) space for computation, (*d*) weighting of problems, (*e*) method of scoring, (*f*) use of preliminary exercises, and (*g*) presupposition of arithmetical technique. Many of these variables need further investigation in order to lay the foundation for more accurate tests of arithmetical-reasoning ability.

Educational Writings

REVIEWS AND BOOK NOTES

A British textbook on educational psychology.—What is educational psychology? The appearance of each new book on this subject raises the question anew. At the one extreme we have the view that, since education is the direction and fostering of mental development, any treatment of mental development or of its conditions—and this would carry us to the extreme of any presentation of psychological fact or principle—is educational. At the other extreme, educational psychology is considered as confined to a direct study of the facts of learning, of individual differences, or of instinctive and emotional reactions as they appear specifically in the school situation. An intermediate type of educational psychology discusses those aspects of general psychology which are believed to be most applicable to educational procedure and attempts to point out occasional applications of its principles. James Drever's new book[1] can be classified in the main as belonging to the last type.

A brief outline of the topics will give a notion of its content. An introduction discusses the general relation of education to psychology. The second chapter deals with the nature of an organism, behaviorism, and the problem of the relation of body and mind and of the conscious and the unconscious. The next chapter continues the general discussion of organic processes and of consciousness, and this is followed by a brief account of instincts and emotions. The discussion up to this point seems to the reviewer to be highly abstract and not suited to the interests or capacity of any but the exceptional teacher. The rest of the book is more concrete and can be more readily applied. It starts with seven "laws of development." They are in part laws of learning and in part more general. This is followed by a discussion of sympathy, imitation, suggestibility, and play. Under the "dynamic of personality" are discussed the interplay of impulses and desires which has been made prominent by Freud. The rest of the book deals with the more commonplace topics—capacities, tests, formal training, training of sense, imagination and thought, and the social group.

The author's central idea is that there are three levels of development, represented on the intellectual side by sense perception, ideation, and rational thought; on the feeling side by immediate feeling or crude emotion, sentiment,

[1] JAMES DREVER, *An Introduction to the Psychology of Education.* New York: Longmans, Green & Co., 1922. Pp. viii+228. $2.00.

and ideal or principle; and on the active side by instinctive, "ideo-motor," and purposive action. Space will not permit an elucidation of these distinctions, but it may be said that the distinctions give a useful basis for the description of mental development.

The book is rather polemical, and its frequent references to debated questions will be confusing to the reader who is unacquainted with the issue discussed. For the teacher who has done some reading on Freudianism, behaviorism, and similar movements, it furnishes a rather stimulating review of these matters and of their bearing on education.

FRANK N. FREEMAN

History of modern education.—Educators need constantly to be reminded of the dynamic nature of human society. During the past two decades there has been evolving an educational program which is the result of many interacting forces, all of which need to be apprehended by the progressive teacher if he would attach himself understandingly to it. One of the significant phases of the movement has been the increasing participation of the national government in the promotion of education.

A recent volume[1] undertakes to trace, since about 1789, the evolution of nationalism in education in Germany, France, England, and the United States.

The author holds that three types of social forces have been involved. They are: "(*a*) the increasing nationalism as a form of political organization; (*b*) the gradual enlargement of the electorate in the control of government, and (*c*) the transformation of economic and social life which has been brought about by the application of a series of important mechanical inventions to the arts of communication and to the processes of the manufacture and distribution of goods" (p. 1). He further maintains that "while the three factors of nationalism, democracy, and the industrial revolution have operated both in Western Europe and in the United States, they have done so in different order, with different emphasis, and with quite different effect" (p. 2).

To trace the influence of each of these factors in the development of the prevailing educational systems of the countries involved is the purpose of the book. A very brief statement concerning the general treatment may serve to indicate the nature of the work.

Part I deals with the educational situation in France. Beginning with the French Revolution, the political, social, and educational transitions are traced in bold outline. Proposed and enacted educational laws are discussed. The structure of the administrative features of the French system is traced to early Napoleonic bureaucratic types of control which are found to be largely influential even at the present time.

The growing democratic spirit in the enlargement of the electorate and significant social and industrial changes under the Third Republic are shown

[1] EDWARD H. REISNER, *Nationalism and Education since 1789*. New York: Macmillan Co., 1922. Pp. xiv+576.

to affect greatly the schools and the types of curricula, as well as the provision made for the training of teachers. An excellent account is given of the French schools.

The educational system of Germany is considered in Part II. The disasters which befell Prussia in the defeat at the hands of Napoleon are regarded as the stimulus toward a new and intense national interest in education.

The position of the state in determining the types of schools, the curricula, and even the detailed content of courses is traced from the early beginnings to the complete dominance of Prussian ideals characteristic of the Empire. One obtains, likewise, an excellent picture of the characteristics of the schools evolved, as well as many a sidelight on the political, industrial, and social factors concerned in the national program. The account is brought down to the establishment of the republic in 1918.

The third division of the book traces the development of education in England. The discussion centers largely about the influences of the Industrial Revolution on social, political, and educational development. The British effort to preserve local initiative and at the same time furnish state aid is well set forth. The descriptions of the secondary schools and universities are particularly attractive. The reports of the various commissions are discussed, as are the Education Act of 1902 and the Fisher Act of 1918, marking the advanced position which England has taken in nationalizing education. With these every American student of education should be familiar.

In Part IV the author deals with the trend of educational policy in the United States. The loose political union between the colonies and their growth toward national unity are the bases on which the author develops his account. Closely related were the early efforts of the states to provide educational opportunities and the sporadic interventions of the federal organization in making grants of land and money. A particularly good account is given of the influence of the Massachusetts colony in its contribution of the district organization and democratic control.

Under the caption "Sectionalism and Democracy (1829–1861)" there is an excellent discussion of the social, economic, and political peculiarities of the East, the West, and the South and the manner in which they affected the educational movements.

The rise of elementary and secondary schools in the forties, the reorganization necessitated as the result of the war between the states, the development of various types of administrative control, the nature and effects of the Morrill acts, and other efforts of the federal government to promote education within the states are effectively presented. Considerable space is given to the problems arising as a consequence of extensive immigration, urbanization, and industrialization. Particularly valuable is the treatment of the rise of various modes of administrative organization.

As evidences of national participation in educational undertakings, the Smith-Hughes, the Smith-Lever, and the Smith-Towner (now Sterling-Towner)

bills are presented and discussed. Here only does the reader feel that the author is inclined to permit his personal beliefs to enter into the discussion.

The book will prove valuable. As a text descriptive of the history of education in which political, social, and industrial factors are given due consideration, it is the only one now available. If against this could be projected the philosophies of the great educational reformers, an almost ideal combination of the forces which have molded modern educational institutions would be presented.

RALPH E. WAGER

EMORY UNIVERSITY

Achievement tests in rural schools.—Those who are interested in comparing the work of the small rural school with that of larger schools will welcome the volume[1] of the recent rural-school survey of New York State which deals with educational achievement. Like its companion volumes, this book is written for the average reader and presents the results of state-wide testing in as interesting and non-technical a fashion as can well be done. It lays particular emphasis on the comparison of the achievement of the one-teacher rural schools, the larger rural schools, and the urban schools as revealed by a number of standard tests.

The results of this section of the survey are based on the testing of over 14,000 pupils in 441 different schools, to all of whom were given both achievement and intelligence tests. In New York a rural school is defined as one in a community of less than 4,500 population. The main tests applied to these rural schools were the Haggerty Intelligence Examination, Delta 2, which was given to all pupils from three to twelve years of age; the Miller Mental Ability Test, which was given to all of the high-school students; and the Haggerty reading tests, Sigma 1 and Sigma 3, Form B. In testing other subjects, use was made of the Woody scales in the fundamentals of arithmetic, Van Wagenen's history scale, Hotz' algebra test, Henmon's Latin tests, and Breed's list of spelling words.

Dr. Haggerty's previous experience in testing the schools throughout the state of Virginia, in giving tests in other school surveys, as well as in experimental work qualifies him well for this work. His application of the tests and his interpretations of the results show a judgment and caution in making recommendations far removed from the unchecked enthusiasm of the amateur user of tests. In his chapter on "Grouping of Pupils" he writes relative to the administrative use of the test scores as follows:

> It should be emphasized that a single intelligence test requiring ten, twenty, or thirty minutes is an inadequate basis for a satisfactory grade allocation of an individual pupil. By any single group test, even when applied under standard conditions, a particular child may be misplaced by a half-year, a whole year, and, in some cases,

[1] M. E. HAGGERTY, *Rural School Survey of New York State: Educational Achievement.* Ithaca, New York: Joint Committee on Rural Schools, 1922. Pp. 224. $0.75.

even more in the capacities which intelligence tests aspire to measure. This fact has long been recognized by those working in the field of intelligence examinations, but has been frequently overlooked in the practical effort to improve pupil grouping speedily. While in general the intelligence test score made by a pupil adds greatly to our knowledge of that pupil's ability to do school work, there is nothing in the results of intelligence test investigations that justifies the discard of other sources of information, such as teachers' judgments, teachers' marks, scores in achievement tests, etc., or even the surrender of common sense on the part of school officers when the grade location of a particular child is at stake [p. 102].

To make the results of the intelligence tests more useful from an administrative standpoint, use was made of an "educational quotient." This is found by dividing the reading quotient of an individual by his intelligence quotient. This educational quotient then combines chronological age, intelligence, and educational achievement all in a single figure showing what the school is doing with the ability of the pupil. The use of the educational quotient is a much fairer measure of the work of the school since it, with its component elements, shows whether the results obtained are due to the intelligence of the pupils or to the success of the school.

A distinct conclusion to which Mr. Haggerty came is that the smaller schools fall below the larger schools in their work and that the larger rural schools are often below the city schools. All sections of this survey lay emphasis on the pressing need of more attention to the rural school, but it is perhaps nowhere more pointedly stated and demonstrated than in this volume. "The existing one-teacher school is the most unsatisfactory educational institution in New York State. Compared to the best schools in the larger communities, the one-teacher school is across the world" (p. 28). "The one-teacher school is a less productive educational institution than is the larger school unit, and the pupils who attend the smaller schools are being handicapped for life by this fact" (p. 223). In the teaching of history, "the larger rural schools, although they are below the New York city achievements, are almost a *full year's progress ahead* of the small rural schools" (p. 22). For the background of these statements and the results which support them, one must read the volume. For those who have not time to read it in full, each chapter is summarized, and all of the summaries are printed together in chapter ii.

DOUGLAS E. SCATES

The education of mentally deficient children.—What may or may not be taught the mentally defective child is a problem which has received considerable attention of both a theoretical and a practical sort. On the one hand, it is believed that the mentally defective may be taught all of the subjects of the normal curriculum if specially designed methods are used; on the other hand, it is maintained that none of the cultural subjects can be of benefit and that development through useful types of handwork should be sought.

Dr. Wallin's monograph[1] is a contribution to exact knowledge of the possibilities with reference to the subjects of spelling, reading, and arithmetic for the various grades of subnormal children.

The children of the special schools of St. Louis were given the Ayres and Starch spelling tests, the Gray reading test, and the Courtis arithmetic tests. Three hundred and four pupils took part in the tests. These children were classified as follows: imbecile, potential moron, borderline, deferred.

The author found that improvement in spelling was shown from grade to grade, from lower to higher mental age, and from lower to higher classification, with differences, however, in the two tests. The highest group of feeble-minded did not do better than second-grade work in the Ayres list or above one and one-half in the Starch list, after having averaged six years in school.

In the reading test the moron group did as well as normal pupils in the second grade, third quarter. The reading test resulted in a zero or nominal score, except in a few cases, for pupils under a mental age of six, although presumably all had had instruction in reading. The author concludes that attempts to teach reading to children of this degree of immaturity represent wasted effort.

In the arithmetic tests the morons did decidedly less well than normal pupils in Grade III, second quarter. The average age of this group at the time of the tests was 13.16 years with an average of 5.67 years in school.

There was found throughout this work much variation in each group, and the author was therefore impelled to give much space to the description of individual pupils. He concludes that the school should not be burdened with the training of imbecile children, that because of social considerations instruction in the three R's should not be dropped even though no high degree of useful skill can be developed, and that children above the third grade should be placed in ungraded classes rather than in classes for the mentally defective. He recommends that much attention be given to the development of "manumental" skill. It may be remarked, however, that this activity has not been subjected to standards of measurement, and it cannot now be stated that it is more effective than the literary subjects.

CLARA SCHMITT

New books for supplementary reading.—The problem of finding suitable supplementary reading material for broadening the child's experience is not easily solved. The task of securing appropriate books is somewhat more difficult in the primary grades than in the upper grades, because at the primary level practically all available material is of the fanciful type rather than of the factual type and therefore provides little content material for the child's thinking. In a group of nine recent supplementary readers five are based on his-

[1] J. E. WALLACE WALLIN, *The Achievement of Subnormal Children in Standardized Tests*. Miami University Bulletin, Series XX, No. 7. Oxford, Ohio: Miami University, 1922. Pp. 98. $0.60.

torical, geographical, or biographical subject-matter; three are of the fanciful or fairy-tale variety, and one is a simple presentation in interesting narrative form of some child experiences which might be true to fact.

Of the first group of readers just mentioned, all five are written for children of the upper-grade or junior high school level. One[1] of the books in this group is an excellent travel narrative describing a journey from Ohio to Oregon over the old Oregon Trail, first by ox-team in 1852 and again by the same method in 1906. The fact that the author, Ezra Meeker, wrote the book after he was ninety years of age adds considerably to the reader's interest in it. The content is very suitable for school use, preserving in vivid style a true description of early pioneer life in America. The form of the book has been carefully adapted to school use by the editor, Professor Driggs.

A second book[2] in the same group is a geographical reader, which gives in narrative form an account of a trip through Alaska. The book abounds in new factual material which is excellent for broadening the experience and stimulating the thinking of the reader. The author has woven the content into a continuous story of the adventures of a group of boys and girls who travel through the heart of Alaska.

The content of a third book[3] is historical in character, being a series of true stories of ancient times. The author devotes a chapter containing a miscellaneous body of information to each of the following peoples: Hindus, Egyptians, Chinese, Babylonians, Persians, Hebrews, Greeks, and Romans. While the materials are miscellaneous in character, they have evidently been carefully selected, covering the more valuable contributions of the civilizations of the past. The book is suitable for the junior high school or the upper elementary grades and could be correlated with either history or literature.

The two remaining books of the first group are biographical in nature. One[4] of these is a collection of nine stories of the lives of historical characters. The stories are very well written and are excellent, from the standpoint of interest, for upper-grade children. The other book[5] is a biography of Booker T. Washington, written for boy readers. The content is authentic and is, for the most part, adapted to the maturity of elementary-school children.

[1] EZRA MEEKER, *Ox-Team Days on the Oregon Trail.* Revised and edited by Howard H. Driggs. Yonkers-on-Hudson, New York: World Book Co., 1922. Pp. vi+226. $1.20.

[2] ISABEL AMBLER GILMAN, *Alaska: The American Northland.* Yonkers-on Hudson, New York: World Book Co., 1922. Pp. viii+344. $1.40.

[3] JEANETTE RECTOR HODGDON, *The Enchanted Past.* Boston: Ginn & Co., 1922. Pp. x+230. $0.88.

[4] LAURA WOOLSEY LORD SCALES, *Boys of the Ages.* Boston: Ginn & Co., 1922. Pp. vi+210.

[5] W. C. JACKSON, *A Boy's Life of Booker T. Washington.* New York: Macmillan Co., 1922. Pp. xii+148.

Of the second group of books two are composed entirely of fairy tales, while a third is a combination of fairy tales, legends, and fables. The two books of fairy tales are quite similar. One[1] of them is a collection of eight fairy tales, some of which are suitable for dramatization. The author suggests that they be used as a stimulus for play. The second book,[2] by the same author, contains a series of nine stories, three shorter fairy tales, and three poems. It is attractively illustrated with silhouette drawings. Both this and the preceding book would be of interest to children in the intermediate grades. The third book[3] in this group has little to commend it. It is another book of a type which has been very commonly used, containing stories which are not outstanding and which seem to be not well graded. There are a few biographical and factual selections, but the style in which they are written is not suitable for primary-grade children.

The last[4] of the nine books is an excellent example of the skilful adaptation of factual material to the interests of primary pupils. It provides a content which broadens the experience of the child and also stimulates both thought and conversation on topics which are pertinent to life in this world rather than in some fairy realm. The book tells, in a series of loosely connected stories, the school and vacation experiences of a group of five little children. There is clear evidence of an increasing demand for this type of material, particularly for use in providing practice in extensive silent reading. It is a book which deserves wide use in the primary grades. It is significant in that it represents a different concept of the function of reading material, a function which has been greatly emphasized in recent reading investigations. It represents a reaction against the excessive use of imaginative and fanciful literary material.

G. T. BUSWELL

A measure of the college.—The question, "Why go to college?" is often more difficult to answer than it seems to be. Young people are frequently able to point out instances which indicate to their own satisfaction that there is no value in devoting four years of one's life to study at college. Among those who are students there exists to a wide extent the feeling that studies are not as important as other activities of college life. The implication is pertinent.

[1] ETHEL M. GATE, *The Broom Fairies.* Boston: Silver, Burdett & Co., 1922. Pp. 110.

[2] ETHEL M. GATE, *The Fortunate Days.* Boston: Silver, Burdett & Co., 1922. Pp. 128.

[3] ABIGAIL O. SHERIFF, *Stories Old and New.* Boston: Ginn & Co., 1922. Pp. viii+112. $0.60.

[4] SHERRED WILLCOX ADAMS, *Five Little Friends.* New York: Macmillan Co., 1922. Pp. 140.

Moreover, the findings of a recent study[1] by Bessie L. Gambrill tend to support the attitude of the students.

The study of the relationship of high standing in college to attainment in later life is not new. It is, however, a problem which involves a large number of variables and is not yet solved. In this latest investigation Dr. Gambrill has in a careful manner taken account of these variables. Her study is novel in several respects, among which are measuring success in later life by the salary received, keeping the correlations for each vocation separate, and including a study of the value of extra-curricular activities. Throughout her work are exhibited commendable thoroughness and a scientific attitude. It is to be regretted only that her data were not obtained from a larger number of alumni.

It is found in this study that success in student activities has approximately twice as high a correlation with vocational success as have high grades. This is based on an admittedly rough measure of extra-curricular success, which, however, is checked by several methods. The author's recognition of the need for a finer measure is indicated in the following quotation:

> The results here reported prove nothing as to the relative contributions of college studies and of extra-curricular activities to the production of vocational success, nor as to the effects of study or neglect of study upon vocational success. Rather, they serve as measures of the two sets of activities, curricular and non-curricular, as selective agents in identifying the qualities which operate in later life to produce vocational success. Until we can measure the initial traits and abilities which a student possesses when he enters college we have no certain means of measuring the degree to which either college studies or extra-curricular activities have contributed to the final product [p. 79].

Thus the report tends to show that college courses leading to the A.B. degree do not test the qualities which make for success in vocational work.

The monograph will be especially useful to those interested in vocational education and guidance. Very full tables are given which include material that is of great value and difficult to obtain. The influence of college on the choice of vocation and on the permanency of choice, the changes in vocation that are likely to occur within twelve years after graduation, why initial and subsequent choices are made, the correlation of high grades with certain vocations and low ones with others, and many other facts are presented. The tables are explained, and the report is thoroughly readable.

DOUGLAS E. SCATES

Physics for boys.—The many books which have been written for the boy who likes to experiment and to read about the wonders of modern scientific

[1] BESSIE LEE GAMBRILL, *College Achievement and Vocational Efficiency.* Teachers College Contributions to Education, No. 121. New York: Teachers College, Columbia University, 1922. Pp. vii+100.

inventions fall, in general, into two classes: those which give directions for performing easy experiments and constructing simple electrical and mechanical devices and those which deal with certain modern inventions, such as the airplane, the submarine, and the gas engine. A recent book[1] in this field takes over the organization of the traditional textbook in physics and attempts to popularize its subject-matter.

There are seventeen chapters in the book dealing with such topics as "What Matter Is," "How to Measure Things," "Forces Simply Explained," "How Machines Are Made and Work," "The Phenomena of Heat," and "Light and Optical Instruments." Each chapter starts with a series of definitions, and, as a rule, each definition is followed by a simple example or explanation. For example, chapter iv, "Forces Simply Explained," contains the following topics: "What Force Is," "What Motion Means," "What Speed and Velocity Are," "The Acceleration of Bodies," "About Momentum," "The Giant Force Called Gravity," "The Laws of Gravitational Force," "The Center of Gravity," "The Three Laws of Motion," "The Gyroscope," "Work and How to Measure It," and "The Conservation of Energy." Simple experiments are scattered throughout each chapter. The mathematical formulas usually found in the physics textbook are included.

It is difficult to see just what contribution this book makes. The book is too difficult for the seventh- or eighth-grade boy and would make little appeal to him. He is interested primarily in what things are and how they work. He has little interest in laws and principles except as they help him to understand the things in which he is interested. Consequently, a book which starts with definitions and principles rather than with applications does not supply a motive for understanding the principles. There are many experiments in the book, none particularly original, which the boy would be interested in doing, and it is highly probable that he would leaf through the book finding these experiments and performing them. The attempt to popularize the subject-matter is largely confined to the wording of the topics. One reads a very attractive headline, such as, "How the Skating Pond Freezes in Winter," and then finds this topic treated in the encyclopedic method which is common to the average physics textbook.

The book may be of some use as a supplementary text in general science for some of the brighter pupils who have acquired an intellectual interest in the subject.

W. L. BEAUCHAMP

A new manual on handwork.—A book which will help kindergarten and primary teachers so to organize their teaching of manual arts that it will give the children practice in planning and problem-solving, and at the same time result in the gradual acquisition of motor skills, is very much needed. A new

[1] CHARLES RAMSEY CLARKE and SIDNEY ALYMER SMALL, *The Boys' Book of Physics*. New York: E. P. Dutton & Co., 1922. Pp. x+308. $2.00.

book on handwork[1] gave promise of filling this need. On examination, however, it proved to be disappointing in this respect. In fact, the author refers to her work as a "compilation of suggestions," and it is little more than this. About nine-tenths of the volume is devoted to describing how to make one hundred and thirty-one different "play-toys" and useful articles, all of which, it is claimed, have at some time been made by children of kindergarten or first-grade age. The descriptions are accompanied by illustrations and diagrams when these are necessary to make the product or the process clear.

In a few introductory pages the author rightly condemns the method which relies on blind imitation, or formal dictation, of each step in the process of constructing an object. She advocates the use of a variety of inexpensive "home materials" instead of the expensive materials required for the traditional kindergarten occupations, and she urges the importance of so organizing the work in construction that children will work with definite purpose and much independence.

If this manual had included several detailed descriptions of the way such problems have been attacked by the children, their method of experimentation and evaluation, and the teacher's part in it all, the book might have filled a long-felt need.

ALICE TEMPLE

The Federal Board for Vocational Education.—Because of the unique position of the Federal Board for Vocational Education as an administrative branch of the federal government it is not surprising that this department was among the first to be investigated by the Institute for Government Research. A recent report[2] includes a brief review of the federal grants in aid of vocational education in colleges and secondary schools and calls attention to the fundamental considerations which led to the enactment of the Smith-Hughes Law. There is a brief statement covering specific activities and functions of departmental representatives, a complete personnel classification, an analysis of the organization, a compilation of the laws governing operations, a summary financial statement, a list of Board publications, and finally a carefully selected bibliography for those interested in administrative phases of Federal Board activities.

This detailed, factual description of important phases of Federal Board history, administration, and functioning should further the objectives set by the Institute for the series of monographs of which this number is a part.

[1] JANE W. MCKEE, *Purposeful Handwork.* New York: Macmillan Co., 1922. Pp. xiv+108.

[2] W. STULL HOLT, *The Federal Board for Vocational Education: Its History, Activities, and Organization.* Service Monographs of the United States Government, No. 6 New York: D. Appleton & Co., 1922. Pp. xii+74.

It aims to bring into existence such information and materials as will aid in the formation of public opinion and will assist officials, particularly those of the national government, in their efforts to put the public administration upon a more efficient basis [p. ii].

EMERY T. FILBEY

Regional geography for elementary schools.—The adoption of geographical material for supplementary reading was a milestone in the advance of social science studies. In order to acquire a knowledge of underlying forces and a social consciousness which admits unity of mankind, the child must know many books of many lands. His use of the library must be guided, however, and in this the teacher finds her best help in a well-planned text.

Both as a text and as a guide, a recent book[1] by Nellie B. Allen takes its place in a series of Geographical and Industrial Studies. The theme of the book is well expressed in the words of the author:

> The effect of environment on the life and occupations of a people and the gifts of nature in soil, climate, minerals, power, and other resources should be emphasized as the underlying foundation of man's activities. Therefore regional geography has been made the basis of the various chapters in this book [p. vi].

As a device for arousing interest, an imaginary journey through the continent is taken. All regions and countries are covered, each important section being given a separate chapter. In every case we see not only the country, for the book is beautifully and abundantly illustrated, but also what the people are doing. The maps, chiefly political, with some emphasis on place geography—geological, physical, and occupational—further relate the environment to the population and its activities.

Following each major topic are lists of suggestions for further study, questions, and supplementary assignments. Assistance is thus given the teacher, not only in directing the socialized recitation, but also in guiding the early reference and library work of the pupils on large unit assignments, organized readings, and either formal or informal reports. A list of specific references might well have been given at the end of each chapter to assist the pupils in early bibliographical work. The omission of such lists lessens the value of the book as a handbook for the instructor.

The joint text and reader is, however, a combination which lends itself to a wide field of school work. As a text, it should be a boon to upper-grade teachers who seek life and color for their lesson materials. As a supplementary reader, junior high school students should find in it valuable recreational reading which will afford them a keener and more sympathetic understanding of our American neighbors.

MAY L. STEWART

[1] NELLIE B. ALLEN, *North America.* Boston: Ginn & Co., 1922. Pp. xiv+392. $1.00.

CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY, AND PRACTICE

Education in Africa. New York: Phelps-Stokes Fund, 1922. Pp. xxviii+324. $1.50, paper. $2.00, cloth.

GREGORY, CHESTER ARTHUR. *Fundamentals of Educational Measurement.* New York: D. Appleton & Co., 1922. Pp. xviii+382.

PARKER, SAMUEL CHESTER. *Types of Elementary Teaching and Learning.* Boston: Ginn & Co., 1923. Pp. xvi+586. $2.00.

Part-Time Schools. Bulletin No. 73, Trade and Industrial Series No. 22. Washington: Federal Board for Vocational Education, 1922. Pp. xii+462.

Public Education in Indiana. New York: General Education Board, 1923. Pp. x+304.

Report of the State School Code Commission of Kansas. Topeka, Kansas: State School Code Commission, 1922. Pp. 76.

Report of the Survey of the Public Schools of Philadelphia. Book I, pp. 370. Book II, pp. 292. Book III, pp. 344. Book IV, pp. 348. Philadelphia: Public Education and Child Labor Association of Pennsylvania, 1922.

SWIFT, FLETCHER HARPER. *Studies in Public School Finance: The West—California and Colorado.* Research Publications of the University of Minnesota, Education Series, No. 1. Minneapolis, Minnesota: University of Minnesota, 1922. Pp. xiv+222. $3.00.

Thirty Lessons in Naturalization and Citizenship. Bulletin of the Department of Education, Vol. VII, No. 6A, Whole No. 51. Boston: Department of Education, Division of University Extension, 1922. Pp. 116.

THOMAS, LEAH C., and GOLDTHWAIT, JOEL E. *Body Mechanics and Health.* Boston: Houghton Mifflin Co., 1922. Pp. 112. $1.25.

BOOKS PRIMARILY FOR ELEMENTARY-SCHOOL TEACHERS AND PUPILS

ADAMS, SHERRED WILLCOX. *Five Little Friends.* New York: Macmillan Co., 1922. Pp. 140.

BLOUNT, RALPH E. *Health, Public and Personal.* Boston: Allyn & Bacon, 1922. Pp. x+316.

Course of Study in Geography for Grades 3B to 8A. Pittsburgh, Pennsylvania: Board of Public Education, 1922. Pp. 74.

GILMAN, ISABEL AMBLER. *Alaska: The American Northland.* Yonkers-on-Hudson, New York: World Book Co., 1922. Pp. viii+344. $1.40.

INGRAHAM, SYDNEY ELEANOR. *The Story of Democracy.* New York: Macmillan Co., 1922. Pp. xviii+322.

KIRK, FLORENCE. *Rhythmic Games and Dances for Children.* New York: Longmans, Green & Co., 1922. Pp. xii+60. $1.25.

PACK, CHARLES LATHROP. *The School Book of Forestry.* Washington: American Tree Association, 1922. Pp. 160. $1.00.

THOMSON, JEANNIE B. *An Experiment in Number-Teaching.* New York: Longmans, Green & Co., 1922. Pp. viii+86. $0.80.

PUBLICATIONS OF THE UNITED STATES BUREAU OF EDUCATION AND OTHER MATERIAL IN PAMPHLET FORM

MONROE, WALTER S. *Relation of Sectioning a Class to the Effectiveness of Instruction.* University of Illinois Bulletin, Vol. XX, No. 11. Urbana, Illinois: University of Illinois, 1922. $0.15.

OTIS, ARTHUR S. *Otis Self-Administering Tests of Mental Ability.* Intermediate Examination, Form A, Form B. Higher Examination, Form A, Form B. Yonkers-on-Hudson, New York: World Book Co., 1922.

Participation of the Federal Government in Education. Majority Report of Special Committee on Education. Washington: Chamber of Commerce of the United States, 1922. Pp. 110.

Recent issues of the Bureau of Education:

Bulletin No. 10, 1922—*Supervision of Rural Schools.*

Bulletin No. 25, 1922—*Higher Education in Australia and New Zealand.*

Bulletin No. 33, 1922—*Record of Current Educational Publications.*

Report of the High School Visitor, University of Illinois, for the Year 1921–22. University of Illinois Bulletin, Vol. XIX, No. 40. Urbana, Illinois: University of Illinois, 1922. Pp. 66.

Sixth Annual Report to Congress of the Federal Board for Vocational Education. Washington: Government Printing Office, 1922. Pp. xiv+406.

MISCELLANEOUS PUBLICATIONS

MAWSON, C. O. SYLVESTER. *Roget's International Thesaurus of English Words and Phrases.* New York: Thomas Y. Crowell Co., 1922 [revised]. Pp. xxxiv+742. $3.00.

MCADIE, ALEXANDER. *Wind and Weather.* New York: Macmillan Co., 1922. Pp. 82. $1.00.

MORIZE, ANDRÉ. *Problems and Methods of Literary History.* Boston: Ginn & Co., 1922. Pp. x+314.

OPDYCKE, JOHN B. *Business Letter Practice.* New York: Isaac Pitman & Sons, 1922. Pp. xx+582.